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*ANTITOXIN IN THE LIGHT OF SCIENTIFIC INVESTIGATION.**

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THE incentive to write this paper—if, indeed, the general interest in the subject be not a sufficiently strong motive in itself—was furnished by a recently published paper entitled "The Failure (!) of Antitoxin in the Treatment of Diphtheria." Were such a paper to appear in the pages of some obscure medical journal, no further attention would be paid to it. But, surprisingly, it was found ornamenting the tablets of one of our most valued medical weeklies, the *Medical Record,* and, what is still more surprising, it was read before a pathologic society in one of our principal and most enlightened cities. Such a paper, under such circumstances, cannot be allowed to pass unnoticed. The ideas expressed and the statements made therein must be submitted to a critical analysis in order that those who are open to conviction may be convinced. I shall first analyze the statements made by the author (Dr. Herman) and then point out the convincing arguments in favor of antitoxin.

Dr. Herman bases his conclusions entirely on clinical statistics. That statistics, when they are garbled to prove or disprove preconceived ideas, are of no value will hardly be gainsaid. The clinical experience with antitoxin covers a comparatively short period; and, considered by itself, might leave doubts as to its value. Moreover, antitoxin has never been universally employed, and it is possible to select scattered statistics here and there

* Read before the Cecil County (Md.), Medical Society, Oct. 12, 1890.

which would support an adverse verdict. But, since this is the only weapon with which this modern Don Quixote assails a scientific fact, I shall here show that, properly marshalled and interpreted, they tell a different story. Here are some statistics from the hospitals of Berlin which are no less convincing than those cited by Dr. Herman.

RECORD OF CASES OF DIPHTHERIA TREATED IN THE HOSPITALS OF BERLIN FROM 1885 TO 1898.

	YEAR.	NUMBER OF CASES.	MORTALITY.	PER CENT.
Without Antitoxin.	1885	1,928	789	41
	1886	1,738	609	35
	1887	1,636	598	36
	1888	1,446	523	36
	1889	1,623	573	35
	1890	1,792	695	33
	1891	1,764	623	35
	1892	2,074	837	40

	YEAR.	NUMBER OF CASES.	MORTALITY.	PER CENT.
With Antitoxin.	1893	2,450	951	38
	1894	2,890	801	28
	1895	3,061	484	16
	1896	2,138	285	13
	1897	1,947	263	13

Here is an instance where the mortality from diphtheria ranged for a period of nine years between 33 and 41 per cent., with a remarkable constancy and regularity. In 1894 antitoxin enters upon the field, and the mortality, with about the same number of cases, is at once reduced to 28 per cent., and keeps on declining until, in 1896, a death-rate of 13 per cent. is reached. This, of course, is only a coincidence! So was the falling of the apple from the tree. It is also noteworthy that in 1885 there were treated 1,928 patients with a mortality of 41 per cent.; in 1892, 2,074 patients with a mortality of 40 per cent.; while in 1896 and 1897 the number of patients was 2,138 and 1,947 respectively, with a mortality of only 13 per cent. This certainly does not bear out the author's statement that with the advent of bacteriologic diagnosis "the applications to the hospital at once nearly doubled." Still, it may be claimed that the cases during the antitoxin years were very mild. The following comparative table, compiled by Gerloczy,[1] will in a measure show the strength of this argument:

[1] "Ueber den wert der Serumtherapie bei Diphtheritis," *Wien. klin. Rundsch*, No. 21-24, 1896.

COMPARATIVE TABLE OF CASES TREATED IN THE ST. LADISLAUS HOSPITAL IN BUDAPEST. THE 401 CASES IN 1895 WERE TREATED WITH ANTITOXIN.

	YEAR.	DIPHTHERIA OF FAUCES AND NARES.		LARYNGEAL CROUP.		DIPHTHERIA OF FAUCES AND LARYNG. CROUP		TOTAL.	
		NUMBER OF PATIENTS.	PER CENT. OF MORTALITY.	NUMBER OF CASES	PER CENT. MORTALITY.	NUMBER OF CASES.	PER CENT. MORTALITY.	NUMBER OF CASES.	PER CENT. MORTALITY.
From 5 to 10 years of age. Up to 5 years of age.	1893	64	53.2	25	72.0	34	88.2	123	66.7
	1894	55	56.4	25	80.0	44	81.9	124	70.1
	1895	135	17.8	47	46.8	67	38.8	249	28.9
All ages.	1893	104	41.4	30	66.7	41	80.5	175	54.9
	1894	105	36.2	31	64.6	53	79.2	189	52.8
	1895	221	12.7	51	43.1	81	34.6	353	22.1
	1893	140	35.7	31	64.5	42	81.0	213	48.8
	1894	141	27.7	32	62.5	54	79.6	227	44.9
	1895	268	11.1	51	43.1	82	34.1	401	19.9

This table presents a comparison between short periods closely following each other. Age and location of disease are the same; sanitary conditions, etc., could also not have undergone any considerable changes; the hospital, physicians and probably the nurses are the same, and yet the mortality drops from 44.9 per cent. to 19.9 per cent. Similar results have been obtained by Church,[2] who treated 633 cases of diphtheria with antitoxin with a mortality of 19.5 per cent, as against 29.6 per cent. prior to the antitoxin period. The author also mentions the epidemic of 1897 in St. Petersburgh, wondering how, despite the great mortality, "Baginsky, with assurance unwarranted even by his own experience, told an American physician that he had had no more dread of diphtheria since he had been using antitoxin than he would have had years ago of any simple ordinary constipation."

It gives me pleasure to introduce in this connection the evidence of Rauchfuss[3] concerning the very same epidemic. Speaking of the gradual increase of diphtheria assuming threatening proportions since 1894, Rauchfuss says that while in 1897 the epidemic reached the climax of virulence (7,298 cases), it was not followed by the general depression manifest in 1881-1884, owing entirely to the general employment of antitoxin *which reduced the mortality fully one half.* (Mortality without antitoxin, 34.1 per cent.; with it, 14.6 per cent.) In the Children's Hospital of Prince Oldenburgski, antitoxin has been used systematically, beginning with the end of the year of 1894; the mortality during the four years (up to 1898) being 21.4 per cent. to 25.5 per cent. (average, 23.8 per cent.);

[2] "Clinical Value of Diphtheria Antitoxin," *Lancet*, June 4, 1898.

[3] "The last epidemic in St. Petersburgh and the employment of Anti-diphtheritic Serum in 1897," *Vratch.*, Vol. XX., No. 16.

while prior to the employment of antitoxin the mortality was 56.9 per cent. During the antitoxin period diphtheritic croup also became less frequent.

	Preantitoxin Period 1892–1894.		Antitoxin Period 1895–1898.	
	Frequency (per cent.).	Mortality (per cent.).	Frequency (per cent.).	Mortality (per cent.).
Diphtheria of mouth without croup	30.2	3.2	46.3	1.7
Phlegmonous diphtheria of the mouth	13.4	80.3	16.7	40.6
Diphtheritic croup	55.1	76.9	36.6	34.2
Diphtheria in other locations	1.2	1.2	0.3	

These observations lead Rauchfuss to the conclusion that a critical analysis of the material gathered from the Children's Hospitals, as well as from private practice of country physicians, establishes beyond doubt the value of antitoxin, by the use of which the mortality was reduced one half. Dr. Dolinski, who was present at the time Rauchfuss read his report, expressed his belief that in antitoxin we possess not only a curative but also a prophylactic measure as well. Several other Russian physicians of wide experience, especially in country practice, have expressed themselves favorably with regard to antitoxin; and since the author allows himself to point out as arguments statements made by individual physicians, quoting one or two individual cases, I may also mention that among the many American physicians who are using antitoxin I have met a practitioner whose ability and wide experience have won for him one of the foremost places in the ranks of our profession, and who is just as enthusiastic over antitoxin as Baginski. Indeed, this physician told me that while he had had a considerable mortality prior to the introduction of this new remedy, he had had none since. Kossel believes that "it is possible to cure every fresh case of true diphtheria by timely injections of a sufficient quantity of antitoxin"; while the well-known statement of Behring that "of each one hundred patients who received the ordinary dose of antitoxin during the first forty-eight hours not even five would die of diphtheria," shows what the true scientists think of antitoxin. I could easily multiply these favorable testimonies and extend statistics almost *ad infinitum*, were I not of the opinion that these data, important as they may seem, are of secondary value in vindicating this new life-saving remedy against attacks. There is sufficient scientific evidence to support the claims of those who are in favor of antitoxin, and to that I shall refer later.

It is asserted that the decrease of the mortality of diphtheria is brought about solely by sanitary improvements, and the still greater decrease of the mortality of typhoid is cited as an illustration. Similar statements are made by the antivaccinationists. This is certainly true of typhoid fever, which is mainly a water-bred disease, and owes its spread to defective sanitation. With the improvements in the water supply of the cities and house drainage the disease has decreased both in frequency and virulence, and the time, I hope, is not far distant when typhoid fever, like the black plague, will be of historical interest only. This can hardly be said of diphtheria. The sanitary conditions necessary for the extinction of this disease are far from having yet been realized. Any one practicing in a large city—and the writer of the paper under consideration is one of them—knows only too well that our present century cannot boast of any extraordinary amelioration of the sanitary conditions of our working class. Our slums are, if anything, expanding their territory to a frightful extent. In face of such evidence as is afforded by the life of our poor in large cities, to claim that diphtheria is decreasing markedly owing to sanitary improvements is as ridiculous as it is untrue.

"A second factor in limiting the spread of the disease (diphtheria)," says Aust,[4] "is the antitoxin. . . . It is hardly possible to doubt at present that the discovery of diphtheria antitoxin forms a most advanced step in the treatment of diphtheria. . . . It must be admitted that a measure which possesses the virtue of curing a disease in a shorter time also, by this alone removes the conditions favorable for the spread of that disease. . . . The time is not far distant when the failure to employ antitoxin in diphtheria, even as a prophylactic, will be considered a professional blunder." Another factor of equal, if not greater, importance is the police regulations with reference to quarantine; the latter, however, can be successfully carried out only with the aid of a bacteriologic diagnosis. But here the author makes the startling announcement that "the diagnostic value of the Klebs-Löffler bacillus has not been indisputably established."

The work of Löffler, Ehrlich, Roux, Yersin, Behring and a score of other able bacteriologists who have succeeded in demonstrating this fact is wiped out by a single stroke of the pen. I shall dismiss this claim with the following statement made by Muir and Ritchie:[5] "The bacillus of Löffler has now been conclusively proved to be the cause of the disease, and its discovery in the false membrane is practically universally regarded as the only certain means of diagnosis. With the exception of the tubercle bacillus, there is probably no organism which has been the subject of so much routine examination, and the opinion of all *who are competent to judge* may be said to be unanimous on this subject."

[4] "Enstehung und Verbreitung der Diphtherie nebst Sanitatspoll-zeilichen Maasregeln zur Verhutung derselben," *Deutsch. Vierteljarsschr. f. Offentl. Gesundheitspfl.* 2 H., 1899.

[5] "Manual of Bacteriology," p. 331.

To prove that the presence of diphtheria bacilli is not an "infallible indication that diphtheria exists," the author quotes a certain Allen, who, while treating a case of diphtheria, submitted the swabbings from the throats of the other members of the household for bacteriologic examination, and much to his disgust (!) the reports were positive, the people remaining healthy. That true diphtheria bacilli are found in the throats of healthy individuals does not argue either against the specific nature of that micro-organism or the value of bacteriologic examination. It is a well established fact that specific micro-organisms may be present within the body of an immune individual without producing disease. This is true of yellow fever, typhoid fever, pneumonia, tuberculosis and probably all infectious diseases, diphtheria not being an exception. According to Park, an examination of the throats of 330 healthy persons revealed the presence of virulent diphtheria bacilli in eight, two of whom subsequently developed diphtheria. But, at the same time, it must be remembered in the first place that the immunity of the individual may at any time be interrupted by an intercurrent disease or any other conditions which establish a *locus minoris resistenciae*, and the "innocent micro-organism may in that case become virulent; and, again, that healthy individuals fostering harmless, to them, pathogenic bacteria may be, and undoubtedly are, carriers of infection. In the case of diphtheria this has been demonstrated in many instances.[6] This being the case, it only serves to further prove the value of a bacteriologic diagnosis by means of which we are enabled not only to administer prophylaxis (antitoxin) to those who are in danger of becoming sick; but, what is of greater importance, to isolate them and thus prevent the conveyance of the infection to others. Moreover, in drawing conclusions from the reports of those cases in which diphtheria bacilli were found in the throats of healthy individuals, we must not forget that in many instances it might have been the pseudo-diphtheria bacillus which was discovered. The two are almost identical in morphologic and even cultural characteristics, and it is only after a great deal of care that they can be differentiated. That such a mistaken diagnosis has been made in many cases is very likely, but this, again, is not the fault of the bacteriologic diagnosis but the bacteriologist, who either relied too much on morphology or was doing his work carelessly and superficially. Glücksmann examined on three occasions the secretions from the throats of healthy children, with the result that on the first occasion pseudo-diphtheria bacilli were found in seven cases out of thirteen, on the second in nine out of fifteen and on the third in four out of eleven.

Another grave charge made against the bacteriologic diagnosis is that through its instrumentality every case of sore throat is included among the diphtheria cases while in ye olden times only genuine diphtheria,

[6] Foulerton and Llewellyn: "On the Conveyance of Diphtheria Infection by Apparently Healthy Individuals," *Lancet*, October 23, 1897.

diagnosed clinically, was reported. A careful analysis of the facts shows this not to be the case, as the following table on the correspondence of the clinical and bacteriologic diagnosis of diphtheria shows:

CLINICAL DIAGNOSIS.	From Children's Hospitals.			From other Hospitals and Physicians.		
	NUMBER OF CASES.	DIPHTHERIA BACILLI PRESENT.	PER CENT.	NUMBER OF CASES.	DIPHTHERIA BACILLI PRESENT.	PER CENT.
Diphtheria	74	71	96	511	353	70
Diphtheria (?)	2	1		65	25	33.8
Sore throat	8	—		111	14	12
Croup	9	8	90	21	14	66.8
Pseudocroup	17	—		5	2	
Diphtherit. Conjunctivitis.	2	2		2	2	
Healthy	40	4				

CASES FROM PRIVATE PRACTICE. PATIENTS OVER TWENTY YEARS OF AGE.

CLINICAL DIAGNOSIS	NUMBER OF CASES.	DIPHTHERIA BACILLI PRESENT	PER CENT.
Diphtheria	69	20	29
Sore throat	21	2	

Thus, of 511 cases clinically diagnosed as diphtheria the adepts of the bacteriologic diagnosis would include only 353 or 70 per cent.; of 69 in the second table only 20 or 29 per cent.; of 21 cases of croup only 14 or 66.8 per cent.; while of 111 cases of sore throat 14 or 12 per cent. and of 21 cases in the second table only 2. Of 5,611 cases of suspected diphtheria Park[7] found true diphtheria bacilli only in 58 per cent. In 119 cases diagnosed by the physicians as true diphtheria Matson[8] failed to find the Klebs-Löffler bacilli. From statistics collected by various authors, both in this country and abroad, it is seen that from 20 to 50 per cent. of the cases diagnosed as diphtheria and sent to hospitals are not cases of true diphtheria, the mortality in these cases being about 1.7 per cent. (Park). These facts prove conclusively that while many cases of so-called "sore throat" were found by the bacteriologist to be diphtheritic, a far greater proportion of cases of what was diagnosed as diphtheria was not found to be due to the diphtheria bacillus, and it is therefore these latter cases which under the old way of depending on the clinical symptoms alone

[7] "Report on Bacteriologic Investigations and Diagnosis of Diphtheria," *Scient. Bull.*, No. 1, of the New York Health Department.

[8] "Annual Report of the Bureau of Health of Pittsburg," 1896.

were included in the statistics of diphtheria. When we remember how prone a physician is to make a diagnosis of a grave disease rather than a mild affection, to keep on the safe side, especially in cases of an epidemic,[9] we can readily see how much more reliable are the statistics based on a bacteriologic examination. There is not a single pathognomonic sign of diphtheria save the appearance of the membrane. The constitutional disturbances accompanying diphtheria may occur in any severe inflammation of the throat, and besides they are so varied that no fixed clinical picture could be drawn, even by such a keen observer as the late A. Flint. He says:[10] "False statistics in regard to death-rate, and erroneous conclusions respecting the effect of treatment, can be avoided only by recognizing as an essential criterion the local diphtheritic characteristics. Adopting this rule, the diagnosis cannot be positive prior to the membranous exudation, which may be preceded for a variable period by pyrexia and other general symptoms."

This single "pathognomonic" sign is also of little diagnostic value. Pathologically, a diphtheritic membrane has no specific significance, representing, as it does, simply a form of inflammatory necrosis which may be due to a great many causes, such as corrosive poisons and other inflammatory processes. Thus it has been well established that streptococci may produce a pseudo-membrane. Blumer[11] reports three cases of membranous angina simulating diphtheria which occurred in the Johns Hopkins Hospital. The predominating micro-organism in the first case was a bacillus identical with bacillus pyocyaneus, and in the second and third an almost pure culture of streptococcus pyogenes was obtained. There is no doubt that these micro-organisms were responsible for the appearance of the membrane. On the other hand, the same author reports two cases of diphtheria without a membrane, one of them simulating follicular tonsillitis. Matson (l. c.) reports a fatal case of diphtheria in which the only symptoms present were those of follicular tonsillitis, no pseudo-membrane having been observed. Within a few hours of the patient's death a swab was inoculated from one of the tonsils and from this a pure culture of diphtheria bacilli was obtained. And yet, in spite of these patent facts, there are physicians who still assert that they are able to make a diagnosis of diphtheria without a bacteriologic examination, and that *their* statistics are the more accurate! I shall not even attempt to refute the following extraordinary statements: "Back of the formation of the false membrane is that deranged condition of the system permitting the growth of pernicious bacteria (?), which abnormal state is really the disease. We do not know but what the forma-

[9] "Some physicians are accustomed during an epidemic to consider cases of simple or follicular pharyngitis as cases of diphtheria." —"A Treatise on the Principles and Practice of Medicine," by Austin Flint. Sixth edition.

[10] *Ibid.*

[11] Notes on some cases of angina treated with Behring's Antitoxin, *Johns Hopkins Hosp. Bull.*, November-December, 1895.

tion of the false membrane is nature's method of protecting the patient; and until it *shuts off the air from the lungs* (!) the membrane may serve some useful purpose." The absurdity of these statements is self-evident. I shall only remark that when the membrane does "shut off the air from the lungs," as in diphtheritic laryngitis, it usually serves the useful purpose of relieving the patient from terrestrial cares. The pseudo-membrane being an exudate is simply a response of the tissue to a local irritant, in this case the diphtheria bacilli. Membrane or no membrane the bacilli, while localized, produce a poison (toxin) which is absorbed and poisons the organism. Most of the diphtheria bacilli, as well as the streptococci, are in the pseudo-membrane, and the advisability of its early removal, either by means of antitoxin or local application, is apparent.

Some grave charges against antitoxin made by the same author must, however, be discussed at some length. They, again, have a semblance of truth which may be misleading. These are: (1) Antitoxin has produced death; (2) it causes paralysis of the heart and other portions of the body; (3) it acts injuriously on the kidneys, skin and joints; (4) it causes septic pneumonia and other complications. When it is remembered that the diphtheria infection produces parenchymatous degeneration of heart muscles and kidneys, is often followed by post-diphtheritic paralysis, and not infrequently complicated by diseases of the respiratory passages, it may well be questioned whether these complications can be attributed to the antitoxin. The increased frequency of these complications, if this be the case, may well be explained by the fact that antitoxin cures many grave cases, the very same which are likely to suffer from the complications named, as was justly pointed out by Dana.[12]

Assar[13] treated 352 cases with antitoxin with a mortality, excluding 140 light cases, of 9.9 per cent. He found that the frequency of albuminuria and grave forms of nephritis decreased (63 per cent. prior and 54.8 per cent. during the antitoxin treatment). Dieudonne,[14] summing up the reports of 9,581 cases treated with antitoxin (mortality 15.5 per cent.), concludes that no bad effects on the kidneys have been observed. Albuminuria occurred in 28.5 per cent. of the cases, but in 17.6 per cent. it already existed prior to the injection. In the report of medical superintendents of the hospitals of the Board in London we find a review of 2,182 cases treated with antitoxin. No bad effects of the serum on the kidneys were manifested. In the report of the American Pediatric Society[15] 5,794 cases treated with antitoxin are recorded. The mortality was only 12.3 per cent.; and if those who died during the first twenty-four hours were excluded, the per cent.

[12] "Diphtheritic Palsies and the Use of Antitoxin," *Med. Record*, April, 1896.

[13] "Erfahrungen ueber die Wirkung des Heilserums in der Behandlung der Diphtherie," *Allg. mediz. Centralzeit.*, No. 16-18, 1896.

[14] "Ergebnisse der Sammelforshung ueber das Diphtherieheilserum fur die zeit vom April, 1895 bis Marz, 1896, *Arbeit aus dem Kaiserl. gesundheitsamte*, Bd. XIII., H. 2.

[15] *Med. Record*, July, 1896.

would fall to 8.8. Bronchopneumonia was observed in 5.9 per cent. In two to three cases a bad effect on the heart was noticed; but, on the other hand, in a great many cases the heart's action was considerably improved. The occurrence of nephritis which could be ascribed to the antitoxin was observed in one single case. Post-diphtheritic paralysis occurred in 9.7 per cent. of the cases.

Dana (l. c.) is of the opinion that post-diphtheritic paralysis is not of any greater frequency after the introduction of antitoxin. In the report of the medical superintendents of the Metropolitan Asylum Board of London we find a very favorable comment on antitoxin. No harmful effects have been observed. Fürth[16] finds no untoward effects produced on the kidneys by the serum. An exanthem occurred in six cases, but when the quantities of serum injected could be decreased on account of the increased potency, this complication also disappeared. This last observation is very important, showing that the skin eruption and the affection of the joints are due entirely to the blood-serum. It is noteworthy that most of the reports of these complications are found in earlier literature, when the antitoxin was weak and large doses of serum were required to produce the desired effect; but as the strength of the serum increases and the amount injected is proportionally diminished, the unfavorable reports become less and less frequent. While it has been demonstrated by Uhlenhuth[17] that the horse's serum is not seriously poisonous, it is nevertheless sufficiently toxic to produce undesirable effects on the skin and joints. But since there is every reason to believe that the time is coming when we shall be in possession of an antitoxin either highly concentrated or in the form of a soluble powder, this bugbear will also vanish.

As to the fatal cases attributed to antitoxin, there have been a few reported; and, even admitting that the antitoxin was the direct cause, we can still explain them by certain idiosyncrasies which are not infrequently manifested in the case of other drugs. Therapeutic doses of strychnin, morphin, etc., have been known to produce death occasionally. A certain physician told me that a patient of his, suffering from pneumonia, had received only one-twentieth of a grain of strychnin three times daily, when marked physiologic effects were noticed in a few days. The drug was discontinued and resumed after the lapse of a few days, the dose having been diminished to one-thirtieth of a grain. After twenty-four hours the patient died of typical strychnin poisoning. Every physician has seen similar cases in which a peculiar idiosyncrasy was manifested, and yet they do not condemn the drugs which have caused death in these particular instances. Again, it is not at all unlikely that in these fatalities due to antitoxin the

[16] Ueber weitere 150 mit Behring'schem Heilserum in der medizin. u. chirurgisch. Klinik zu Freiburg i., B. behandelte Diphtheriefälle, *Munch. med. Wochenschr.*, No. 29, 1896. 2. Zur Kenntniss der giftigen Eigenschaften des Blutserums, *Zeitschr. f. Hyg. u. Infektionsk.*, 1897.

[17] " Zur Kenntniss der giftigen Eigenschaften des Blutserums," *Zeitschr. f. Hyg. u. Infektionsk.*, 1897.

latter was in some way contaminated. At all events, we may consider these cases as pure accidents.

In view of the fact that figures can so easily be made to lie and that statistics can unfortunately be so arranged as to disprove the value of antitoxin, we must turn now to the more precise and scientific data obtained from laboratory experiments. The laboratory of late is the cradle in which many a scientific fact bearing on medicine is reared by the tender hands of the laboratory worker. It is in the laboratory that the pathogenic micro-organisms were first discovered and described; it is in the laboratory that Widal's agglutinating reaction was first observed, and it is there that Roentgen rays were first made to penetrate opaque objects. For the clinician it remains to make practical application of all these facts, and this can only be successfully accomplished when the latter are understood and appreciated.

Turning, then, to the laboratory for evidences in favor of antitoxin, we find them overwhelming. In the first place, diphtheria antitoxin is not a single phenomenon but a link in the chain of serum-therapy, which means, in other words, the production of artificial immunity. The antitetanic and antistreptococcic serums, small-pox and anthrax vaccination, etc., are all links in the same chain, and every one of these has saved, or is destined to save, many a human life. The production of artificial immunity is an endeavor to imitate the natural immunity by which nature guards the organism against disease. Numerous attempts have been made to explain these two forms of immunity and establish their correlation. It is claimed by some that the two are identical, and that natural immunity can be transferred from one organism to another. Parker,[18] on the one hand, endeavored to establish the immunizing properties of non-immunized serum, while MacFarland[19] in his excellent paper, on the other hand, refuted the extravagant claims made by Parker; and a careful analysis of the facts cannot but lead us to the conclusion at which Behring[20] arrived, namely, that "the blood of animals which have acquired a natural immunity does not possess either immunizing or healing properties." The two are alike, but not identical. In the case of natural immunity the cells have been changed in their composition so that they cannot enter into combination with the toxins, while in artificial immunity the cells produce a soluble antitoxin which serves to neutralize the toxins and thus render them harmless. Such a natural immunity is possessed by the cells of our body against certain deleterious products of our own metabolism.

The stimulation of the cells to produce a protective antitoxin can be accomplished by means of any toxic substance, be it the product of bacterial life or a chemical poison. Ehrlich succeeded in immunizing white mice to

[18] International Medical Magazine, 1899.

[19] International Medical Magazine, September, 1899.

[20] "Die Blutserumtherapie bei Diphtherie und Tetanus," *Zeitschr. f. Hyg. u. Infektionsk.*, Bd. XII., 1892.

ricin, and, moreover, their blood conferred the same immunity upon other susceptible animals. Similar results have been obtained with other chemical substances by Woolridge, Buchner, Brieger, Kitasato, Wasserman and others. A certain degree of immunity against diphtheria was obtained by Behring and Wernicke by the injection of peroxid of hydrogen, iodintrichlorid and chlorid of gold and sodium. Dieudonne[21] succeeded in checking anthrax in dogs by intravenous and intraperitoneal injections of sodium cinnamate. These facts are understood when we remember that the bacterial toxins are also only chemical substances possessing a definite chemical composition. The toxins of diphtheria can be dried and preserved in the form of whitish-yellow powder. They change their properties in various media, and while they lose their virulence in the presence of an organic acid, they regain it when the medium is again rendered alkaline (Roux and Yersin). They can be precipitated by alcohol or calcium phosphate. The same is true of antitoxin, which is also a chemical product of the cells. "One molecule of toxin," says Ehrlich,[22] "combines with a definite and constant quantity of antitoxin." Here, then, we have practically a chemical poison and an antidote, the latter acting upon the former with as much certainty as any other antidote in our materia medica acts upon its respective poison. Animals can be killed with a certain quantity of diphtheria toxin or saved by a proportionate quantity of antitoxin. According to Cobbett and Kanthack,[23] 0.15 c.c. of toxin, when injected into a guinea pig weighing 270 grams, will be neutralized by 0.1 or one antitoxin unit of antitoxin, but when 0.3 c.c. of toxin and 0.1 c.c. of an antitoxin unit are used, a slight infiltration will result; when only 0.088 of a unit are employed considerable infiltration and necrosis will follow and if a still smaller quantity of antitoxin is administered death follows on the third day. The following table from Park[24] illustrates the relations between toxin and antitoxin:

WEIGHT OF GUINEA PIG IN GMS.	AMOUNT OF TOXIC BOUILLON IN CC.	AMOUNT OF SERUM IN CC.	RESULT IN ANIMAL.		
			WEIGHT ON 5TH DAY.	AMOUNT OF INDURATION ON 5TH DAY.	GENERAL CONDITION ON 5TH DAY IF ALIVE.
260	2.00	.0012	265	None.	Good.
257	2.10	.0012	242	Slight.	Good.
250	2.16	.0012	237	Considerable.	Good.
252	2.20	.0012	215	Considerable.	Sick.
265	2.36	.0012	225	Considerable.	Dying.
252	2.38	.0012	.....	Marked.	Dead on 5th day.
250	2.40	.0012	.....	.....	Dead on 3d day.

[21] "Shutzimpfung und Serumtherapie," p. 35.

[22] "Die Wertbemessung des Diphtherieheilserums und deren theoretische grundlagen," *Klin-Jahrbuch.*, B. VI.

[23] *Centralbl. f. Bacter., Parasitenkun. u. Infektionsk.*, Bd. XXIV., No. 4.

[24] "The Relation of the Toxicity of Diphtheria Toxin to its Neutralizing Value upon Antitoxin at Different Stages in the Growth of Culture," *Jour. of Experim. Med.* Vol. III., Nos. 4 and 5.

It is thus seen that even slight oscillations in the quantities of either toxin or antitoxin will change the results, and these are brought about with such a constancy that they can almost be predicted.

It may be claimed by the doubting Thomas that the diphtheria toxin acts on animals and man differently and therefore we cannot draw conclusions from results obtained with the former. The scientific evidences which prove that the effects of the toxin on both are similar are too numerous to be embodied in this paper. I shall only point out briefly the effects produced on man and susceptible animals:

EFFECTS OF DIPHTHERIA BACILLI

ON MAN.	ON SUSCEPTIBLE ANIMALS.
Elevation of t° and all other phenomena accompanying pyrexia.	Elevation of t° and all other phenomena accompanying pyrexia.
Pseudo-membrane at the seat of infection.	Infiltration and necrosis at the seat of inoculation. Pseudo-membrane on mucous surfaces when previously injured.
Degenerative changes in the kidneys, heart and voluntary muscles. Congestion of internal organs.	Degenerative changes in the kidneys, heart and voluntary muscles. Congestion of internal organs.
Albuminuria.	Albuminuria.
Post-diphtheritic paralysis.	Post-diphtheritic paralysis.
If fatal, death by asthenia.	If fatal, death by asthenia.
Bacilli found at the seat of infection, very rarely in the internal organs.	Bacilli found at the seat of infection, very rarely in the internal organs.

"If antitoxin is a specific," argues Dr. Herman, "why does it not cure all cases?" The reason is not far to seek: (1) It is not used early enough, time being given for the streptococci to develop and produce their virulent effects. Hilbert[25] found that when a mixed culture of diphtheria bacilli and streptococci is inoculated into animals afterwards treated with antitoxin, the latter recover from the diphtheria but succumb to the streptococcus infection. But when the antitoxin is used early, the streptococcus infection is averted. (2) It is not used energetically enough, too small quantities or at too rare intervals being administered. (3) There is a proportion of patients who are so susceptible to the disease that antitoxin cannot cure them, just as there are patients suffering from malaria who cannot be cured by quinin, or syphilitics who are not cured by mercurials and iodids.

[25] "Ueber Wesen und Bedeutung der Mischinfektion bei Diphtherie und ihr verhaltnis zur Heilserumtherapie," *Deutsch. Arch. f. klin. Med.*, Bd. LIX., 1897, p. 248.

HERPES ZOSTER, WITH ESPECIAL REFERENCE TO THE SUPRA-ORBITAL TYPE.

BY JAY F. SCHAMBERG, A.B., M.D.,
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EVERY physician is from time to time consulted by patients suffering from acute neuralgia. Ordinarily, this functional disorder yields to simple treatment, and the favorable prognosis usually given is sustained. Not infrequently, however, the neuralgic pain is the expression of an undeveloped herpes zoster, and the pain is soon followed by an outbreak of vesicles in the affected region. It is always a source of annoyance to have one's prognosis proved false, particularly when there develops an unprophesied and rather formidable looking eruption. Patients under such circumstances are prone to apply the "post hoc," and conclude that the sudden outbreak of an eruption following immediately upon the administration of a drug bears the relation of effect to cause. The point to be remembered is that in the presence of a severe and persistent neuralgia occurring over an area frequently the seat of herpes zoster, such as the supra-orbital and inter-

FIG. 1.

costal regions, the possibility of a prodromal zosteric pain is to be borne in mind and the prognosis guarded thereby. There is much difference of opinion among authorities as to the etiology of herpes zoster. The preponderating frequency of this affection in the spring and autumn, with an occasional apparent epidemicity, have led many to regard the disease as of infectious origin. Exposure to cold appears to be responsible for some cases.

The pathology of the disease is no longer a matter of contention. In the case of intercostal zoster, the lesion exists either in the peripheral nerves or the ganglia upon the posterior root of the spinal cord. In trifacial herpes zoster —and it may here be remarked that this is the only cranial nerve affected—the Gasserian ganglion is the seat of the pathologic change. Any cause capable of giving rise to a neuritis or a ganglionitis may produce a herpes zoster.

FIG. 2.

In a typical attack of herpes zoster, there occurs, after prodromal neuralgic pain, an outbreak of deep-seated vesicles with the characteristic arrangement in clusters. The lesions are seated upon an inflammatory base and there is often much swelling. The distribution is striking, and gives an immediate clue to the diagnosis. The eruption follows more or less closely the line of a nerve trunk and its cutaneous branches. Furthermore, the eruption is almost invariably limited to one side of the body: Bilateral cases of zoster are of extreme rarity. Occurring in the supra-orbital region, the eruption is sharply limited by a line extending from the root of the nose to the sagittal suture. A few lesions are apt to develop just beyond

the median line. This condition is well represented in the accompanying photograph.

The disease runs a more or less definite course, lasting from ten days in mild cases to three or four weeks, and ending in spontaneous recovery.

FIG. 3.

The pain is variable in intensity, sometimes mild, at other times so intense as to render sleep impossible. Children suffer very much less than adults. The pain precedes the eruption, accompanies it, and not infrequently persists after its disappearance. Indeed, weeks and months may elapse before its entire subsidence.

Supra-orbital herpes zoster differs somewhat in its symptomatology from

zoster affecting other regions. The eyelids always participate in the general swelling and not infrequently the eyeball itself is compromised. There is usually swelling of the bulbar and palpebral conjunctivae and frequently herpetic vesicles upon the conjunctiva and cornea. In severe cases corneal ulceration and iritis develop, terminating at times in a general panophthalmitis and total destruction of vision. In supra-orbital zoster there is greater liability of a continuation of the neuralgic pain than in the other forms. Fig. 2 represents a patient with a severe supra-orbital zoster with marked vesiculation and an unusual amount of crusting. The bulbar conjunctiva presented much chemosis and one or two vesicles. Both the conjunctiva and the affected skin remained for a time afterwards anesthetic. The patient suffered severe pain both during and after the attack. This was entirely relieved by the application of the faradic current.

Again, as a result of the marked trophic disturbance, necrosis of the affected areas may take place. This leads to the formation of ulcers which leave indelible scars. Fig. 3 is a well-marked example of ulceration from trophic skin necrosis.

The treatment of herpes zoster has for its object the relief of pain and the protection of the affected skin areas from mechanical injury and infection. For the relief of the distressing neuritic pain one may employ the coal tar anodynes, such as antipyrin, phenacetin, etc., either alone or in conjunction with bromids. When the pain is severe, however, it will be found necessary to resort to the use of morphin. A therapeutic measure of great value, both for the mitigation of the pain during and after the attack, is the electric current, preferably the galvanic. This should be applied in weak current once or twice a day over the affected areas.

Locally, dusting powders, lotions, ointments and paints are used. Collodion may be advantageously painted over the patches when they are conveniently situated and not too extensive. In mild cases it will suffice to use an antiseptic dusting powder, containing, if desired, a few grains of opium, and cover the area with absorbent cotton and a bandage.

When the cornea is involved, the patient should receive skillful ophthalmological treatment.

The Pineal Gland and Sexual Development. Dr. Heubner, of Berlin, had the following interesting case: A boy, 4½ years old, presented the development of a boy of 8 or 9 years, as well as an abnormally large penis, well-developed scrotum and testis, the pubes being covered with hair. The boy suffered in infancy from spasms of the larynx, his speech developing slowly. Up to 7½ months the development was normal, the abnormal growth having taken place within one year after that period. He finally developed hydrocephalus, and, by means of the X-Rays, a tumor was located in the neighborhood of the hypophysis cerebri. The boy died, and an autopsy revealed a tumor of the pineal gland.

HIGH AMPUTATION OF THE CERVIX AND VAGINAL SUTURE AS A PRELIMINARY TO ABDOMINAL HYSTERECTOMY, WITH THE REPORT OF A CASE.

BY W. WAYNE BABCOCK, M.D.,

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THE supra-vaginal method of abdominal hysterectomy from its convenience and safety seems at present to be the preferable method of removing the uterus in most cases where there is no malignant or infectious disease. The smaller number of cases in which it is desirable to open the abdomen for the performance of total hysterectomy is usually operated upon by one of two methods. Either the uterus is removed entirely through the abdominal incision, curettage and cauterization being at times included in the preliminary preparations for vaginal asepsis; or, the broad ligaments having been ligated and divided by a coeliotomy, the abdominal incision is closed and the uterine removal completed through the vaginal vault. The subjoined case has suggested the occasional usefulness of a somewhat modified reversal of this latter procedure.

The patient was a fleshy married woman, forty-seven years of age, and with a cancerous family history. Since the age of fourteen, she has suffered from occasional attacks of pain in the right hypochondriac region, that are associated with nausea, vomiting, and, at times, jaundice. For ten years a sense of discomfort has been frequently present in the lower abdomen and pelvis, and during the past two years this has developed into attacks of severe, dull, dragging pain that last two weeks, and occur immediately before or during the menstrual period. Within the past few months a procidentia has been noticed. Menstruation is not painful, has continued regular as to time, and has not been excessive in quantity.

An examination, with the patient recumbent, showed a narrow, elongated cervix protruding at the introitus vaginae. Above the cervix was continuous with a firm, resistant and globular tumor of about the size of a fetal head that occupied the pelvis and lower abdomen. No disease of the uterine adnexa could be made out. The family tendency to malignant disease, and the patient's urgent desire to be assured, as far as possible, against future malignant disease, made it seem desirable to extirpate the entire uterus as well as the fibroid tumor. This conclusion was strengthened by the fact that the cervix was elongated and in its prolapsed condition had been exposed for a considerable period to a greater or less degree of irritation, and by the experience of those operators who have noted an epitheliomatous development in the cervix left after a supra-vaginal hysterectomy.

The low-lying position of the tumor, with the attendant difficulties of satisfactory vaginal division, hemostasis, and suture through the thick abdominal walls, made it seem undesirable to do a purely abdominal hysterectomy. On the other hand, a purely vaginal hysterectomy or a hysterectomy by the usual combined method was rendered inexpedient by the size of the tumor.

The following method was therefore adopted April 11, 1899. The patient having been etherized and the field of vaginal operation asepticized, the cervix was pulled down by a pair of tenaculum forceps and was encircled by an incision to the depth of the cellular plane. With continued traction upon the cervix, the adjacent tissues were carefully pushed off until the uterine vessels were exposed. These vessels were ligated with catgut and the cervix amputated at a high level. A provisional mattrass suture of heavy silk was immediately introduced in the amputated face of the cervix in a manner to occlude both the oozing vessels and the divided cervical canal. Mattrass sutures of catgut were then introduced to completely close the incision in the vaginal vault. Before these sutures were tied the cavity above the vagina was thoroughly irrigated and firmly packed with iodoform gauze. This packing served not only to limit any remaining oozing, but also tended to elevate the tumor in the pelvis, to push the ureters, bladder and rectum from its lower portion, and to serve as a guide at a later stage of the operation. The sutures in the vagina having been tied, a supporting tampon of gauze was introduced into the vagina, the peritoneal cavity as yet not having been opened.

The second part of the operation was now begun by the conventional median incision through the abdominal walls. After liberating a few adhesions between the intestine and tumor, the ovarian and round ligament vessels were ligated on each side and the upper part of the broad ligaments divided. Connecting the broad ligament incisions by an incision across the face of the tumor, the bladder and broad ligaments were stripped down. Some hemorrhage occurred during the division from the left uterine artery and both uterine arteries were retied individually with fine silk. Guided by the gauze packing, the remaining structures were divided and the tumor (a globular fibromyoma with central necrosis), uterus, ovaries and gauze removed, the procedure being greatly facilitated by the fact that it was not necessary to interfere with the vaginal vault.

After suturing in turn the pelvic cellular tissues and the peritoneum over the vaginal stump with continuous sutures of fine catgut, the gall bladder was palpated for calculi and the abdominal incision closed, in layers, by buried sutures of chromicised and plain cumul catgut. The convalescence was a febrile and associated with surprisingly little pain.

The procedure, in outline, consists of a preliminary high cervical amputation with the ligation of the uterine arteries, the constriction or coapta-

tion of the face of the cervical stump and cervical canal, and the approximation of the vaginal wound by sutures after the introduction of a packing of gauze or other material above the vagina. The peritoneum is not opened from below. The removal of the uterus through the abdomen is facilitated by: (1) The preliminary control of the uterine and vaginal vessels, permitting the complete arrest of the uterine circulation by ligature placed in the upper part of both broad ligaments. (2) The guide and support afforded by the gauze packing below the stump of the cervix, that also, by pressing aside the ureters, bladder, etc., limits the danger of wounding these important structures. (3) The previous closure of the vagina, which not only renders it unnecessary to either incise or suture this organ through the abdominal incision, but also tends to limit the danger of peritoneal infection from this source.

Of course for the many cases of abdominal hysterectomy where there is no indication for the removal of the cervix, the method by supravaginal amputation is far preferable; while in many cases of uterine tumor in which the cervix is largely effaced or is displaced upwards or backwards, the procedure is hardly applicable. But in certain cases of large uteri, with benign or malignant tumors that are situated low in the pelvis, where there is an indication for the removal of the cervix the preliminary vaginal operation may diminish the chances of sepsis, facilitate the intra-abdominal work, afford a better technique and perhaps insure a better convalescence than the usual abdominal or combined pan-hysterectomy.

The indications for the removal of the cervix during a hysterectomy include: (1) All cases of malignant disease, or of tuberculosis of the uterus; (2) certain cases in which there is laceration, hyperplasia or inflammation of the cervix not to be relieved except by an extensive trachelorrhaphy or amputation; (3) certain cases in which the retention of the cervix is believed to predispose distinctly to a future malignant involvement. Of course there are cases of extensive malignant or infectious disease where the suture of the vagina may be unwise; but even here a temporary suture, to be removed and replaced by a drain after the abdominal closure, may prove of service.

1833 Chestnut Street.

THE USE OF CALOMEL IN DIPHTHERIA.[1]

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My experience for the past nine years with the use of calomel in the treatment of diphtheria corroborates so perfectly the position taken by my friend, Dr. Judd, in his admirable paper, that I am very glad to have the

[1] Remarks made during the discussion of Dr. L. D. Judd's paper of this title before the American Climatological Association, at its meeting in New York, in June, 1899.

opportunity of adding my testimony to what he has said. My father, Dr. John S. Coleman, toward the latter years of his life, used the mercury treatment for diphtheria with such signal success that I could not fail to see the virtue of it.

In a paper which appeared in the *Journal of the American Medical Association* of February 23, 1899, he records some experiences in the use of bichlorid of mercury in this disorder. In one case he gave a child sixteen months old nine grains of bichlorid in three days, with the result that at the end of that time the child expelled a membrane containing the impression of six tracheal rings—complete recovery following.

Latterly he gave up the use of bichlorid for the subchlorid or calomel, for the reason that the bichlorid tended to irritate the stomach. In one case which I now recall he gave the five-year-old son of a physician 360 grains of calomel in three days, complete recovery following. The boy is now a robust lad of fifteen years. In all his experience with mercury in the treatment of diphtheria, he lost only one case, and this case he was called to only after other remedies had failed, and only twelve hours before the child died.

My own experience in the treatment of the disease has been similar and equally gratifying. In an experience extending over nine years I have only one death to record where this treatment was employed, and this case was most malignant from the start, the membrane involving the nose, pharynx and trachea.

My rule in these cases is to give a large dose of calomel at the beginning, regulating it according to the age, and then to give hourly doses until the characteristic "chop-spinach" movements appear, then the interval is increased until the drug is left off entirely.

I cannot add anything to Dr. Judd's directions for administering the drug, as I consider that they are sufficiently full to guide one. With reference to certain indefinable fears of ill effects from the drug when given in such heroic doses, I can only say that the ability of patients to take such large doses without ill effects, is, in my opinion, due to the fact that the ordinary physiologic effect of the drug is overcome by the poison or toxin of the disease.

I wish to say in conclusion that I do not believe it produces anemia, because I believe that the disease itself does this profoundly, and any drug which so certainly cuts the disease short, would by that much prevent those blood changes which are responsible for the anemia. Furthermore, I have never seen any disagreeable effect whatever resulting from the administration of the drug, and I have gotten such universally good results from its use that I have been unwilling to relinquish it for newer and more sensational remedies.

TALKS TO GENERAL PRACTITIONERS.

THE TREATMENT OF RETRODISPLACEMENTS OF THE UTERUS.

BY EDWARD E. MONTGOMERY, M.D.,
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Retrodisplacement of the uterus is the most frequent form of displacement in the multiparous woman, forming, as it does, the first stage of prolapsus. Where the organ is thrown backward in the form of retroversion, and the cervix is more or less fixed, the body of the organ is driven downward in a position of retroflexion. Probably no form of displacement affords greater difficulty in its management by mechanical means than the posterior flexion. The method of treatment of the retrodisplacement, however, must depend upon its duration and the existing complications. In the early stage of the trouble, where the displacement occurs following a recent abortion or parturition, the replacement of the uterus and its maintenance in the proper position by a suitable pessary will frequently bring about a completion of the process of involution and the organ will in a short time maintain itself in its proper place without support. The longer the condition exists, the more marked changes result, rendering it difficult, if not impossible, to overcome the condition by mechanical means. It is important for the successful treatment of such conditions to carefully study the cases and adapt the treatment to the case, rather than the case to the treatment. In other words, no routine treatment will be suitable for every form of displacement. Some patients are made very much more comfortable by the introduction of tampons or a suitable pessary, while others can wear neither without the greatest discomfort and an apparent aggravation of the symptoms which arise from the disease. The great mistake the majority of physicians make in the employment of mechanical means is in not keeping in mind the necessity of first replacing the uterus before the support is put in position. A pessary introduced without the uterus having been previously placed in its normal position but aggravates the distress, as the fundus of the uterus slips down between the posterior bar and the sacrum, and is consequently pinched and irritated. There are three methods usually recommended in the text-books for putting the uterus in its proper position. Two of these can be practiced with safety; the other one should not be employed.

Of the first two methods, one consists in placing the patient in the dorsal position, the limbs separated, and the introduction of two fingers into the vagina, while the other hand is placed over the abdomen. With the middle finger the fundus of the uterus is pushed upward, while the index

finger hooks over in front of the cervix, pushing it backward. In this way, between the two fingers the fundus is carried forward until it can be reached with the external hand and drawn against the symphysis. The pushing back of the cervix necessarily tilts the other end of the lever forward. Occasionally, the curve of the sacrum is so marked that the fundus of the uterus impinges beneath the promontory of the sacrum, from which it cannot be readily dislodged; the dragging upon the cervix with the double tenaculum, while the finger in the posterior fornix pushes up the fundus, will generally serve to dislodge the uterus, when the organ can be carried forward by pushing backward and upward the cervix.

The second method of procedure is to place the patient in the genupectoral position. This not only removes the intra-abdominal pressure, but, by gravity, drags the viscera out of the pelvis. The introduction of the speculum and retraction of the perineum balloons the vagina and the uterus is carried well upward. This does not necessarily, however, correct its position, as while it is situated at the upper part of the vagina it may still be in the retroflexed or retroverted position. The displacement is not immediately overcome, the cervix can be dragged downward and backward with the tenaculum, which will permit the fundus to fall forward. While in this position the patient may have introduced a suitable pessary to maintain the organ in place.

The third method mentioned in text-books, which we condemn, is the introduction of the uterine sound into the cavity of the uterus. This procedure endangers the patient from the possibility of the introduction of pathogenic germs with the sound, and is not unattended with danger. The introduction of the sound will necessarily to a greater or less degree injure the uterine mucosa. The escaped blood forms an excellent culture medium for any pathogenic germs that have been introduced, so this method is not infrequently followed by pelvic inflammation. If the organ is readily replaced, the vagina in a normal condition, the uterus not overly large, a pessary may be placed to maintain it in the replaced position. This pessary should be of sufficient length to drag back the posterior fornix of the vagina, thus making traction upon the posterior part of the cervix, and as this is lifted up, the fundus of the organ must be kept forward. In relaxed vagina, in heavy uteri, and in cases in which the replacement cannot be completely effected, the use of the pessary will prove unsatisfactory.

Not infrequently do we find that retrodisplacement is complicated by inflammatory conditions of the pelvic peritoneum, which result in adhesions of the uterus to the rectum, to the surrounding structures, or the uterus may remain free and adhesions involve the tube and the ovary. In these cases, where the adhesions are long, the uterus may apparently be put in proper position by dragging up the anterior wall of the rectum. The introduction of the pessary to maintain it in place would result in the dragging backward of the fundus, over the pessary, and the discomfort of the

patient is greater than from the condition for which the instrument is introduced. The existence of adhesions fixing to a greater or less degree the fundus of the uterus, does not necessarily demand operative procedure. Where operation is indicated, it need not necessarily be a bloody one. Adhesions, if not too firm and of too long standing, may be overcome by the practice of pelvic massage. The manipulation of the uterus, the dragging from side to side, the gradual pressing down of the hand over its posterior surface, will result in the stretching of bands of adhesion, tearing those that are recent in character, and by repeated practice of the procedure absorb bands of strength too great for tearing.

Various operative procedures have been devised for the treatment and maintenance of the retrodisplaced uterus in position. Thus, Schultze, in cases of recent and not too strong bands of adhesion, advises forcibly bringing the fundus of the uterus forward and maintaining it by the introduction of a pessary. His plan of procedure is to introduce two fingers into the rectum, carry them over behind the uterus and introduce the thumb of the same hand into the vagina against the cervix. As the uterus is pushed up by the thumb, the two fingers in the rectum drag down upon the anterior wall of the rectum and pull it off from the posterior uterine wall. This operation can be accomplished in recent adhesions, but where there is reason to believe the adhesions are old and quite firm, it should be practiced with the greatest caution, on account of the danger of tearing the Fallopian tubes. If the uterus has been brought forward, it can then be maintained by the introduction of a pessary.

Other operative procedures that have been devised for retrodisplacement of the uterus are: First, that of Alexander, which consists in shortening the round ligaments. This operation is accomplished by making an incision upon either side about half an inch above Poupart's ligament and parallel to it. The incision is situated over the pillars of the external ring. In the front part of the opening is seen a small pledget of yellow colored fat which indicates the exit of the round ligament. This is pressed upon, so as to render the round ligament more accessible, an instrument passed beneath it and the ligament drawn out, three or four inches, if necessary. A similar method of procedure is instituted upon the opposite side The ligaments thus drawn out are sutured in the track and are fastened in the abdominal wall. The objection to this operation is, that it requires two incisions, one upon either side, not into the peritoneal cavity, it is true. It is not applicable to every case. Indeed, it is limited in its usefulness to those cases only in which the uterus and its appendages are free from adhesions. Where adhesions exist, the ligaments are shortened, the organ is subjected to two forces, one pulling it forward, and the other backward, rendering the patient more uncomfortable. An operation which may take the place of this, and has a wider field of usefulness, is that known as ventrofixation or ventro-suspension. This consists in making a single incision in

the median line, which opens the abdominal cavity and permits the fundus of the uterus to be inspected, the organ to be drawn forward, adhesions broken up, and diseased conditions of the tube and ovary properly treated. The adhesions can be broken up, ovaries and tubes set free, any diseased condition of the ovary or of the tube corrected and the uterus brought forward and fixed to the anterior abdominal wall by the insertion of sutures, fastening it to the peritoneum. These sutures are passed through the peritoneum only, with the view to the formation of a band of adhesion which shall maintain the uterus forward. An objection to the operation is that a band of adhesion is formed between the fundus of the uterus and the anterior abdominal wall, which, when the convalescence of the case is complicated by inflammation, may form a rather dense and firm band which fixes the organ. In subsequent pregnancy and parturition, such a band may be an element of danger. When firm, it gives rise to fixation of the fundus of the organ and to its dilatation at the expense of the posterior wall. This may become so thinned as to endanger rupture by the uterine contractions. The pulling and traction of the ligament is frequently so great as to cause the patient very marked distress and render her willing to submit to an operation for the separation of the band.

Other operations, with a view of avoiding this difficulty, have been devised by Mann, Wylie, and others, which consist in running tucks in the round ligaments by which these ligaments are shortened and drawn forward. The round ligament may thus be shortened by simply folding a portion together and stitching it in the center, this fold extending outward or inward; or, as has been suggested by Mann, that the ligament be divided into three portions by catching at the junction of the middle and inner third; draw this outward and stitch it to the outer part of the round ligament. Then the outer third or the other end of the loop is carried upward and stitched to the side of the uterus. This forms three layers of the ligament. Dudley operates by freshening the anterior surface of the fundus and opens the sheath of the round ligament at about its center. This is carried forward and stitched to the denuded surfaces upon the fundus of the uterus. This method of shortening the round ligament has the advantage that it does not interfere with the normal mobility of the uterus, yet acts as a stay which holds the organ forward and keeps the intra-abdominal pressure directed upon its posterior surface. It produces no inconvenience in subsequent pregnancy, beyond a possible slight traction upon the ligament, which may be at times painful and is less severe than that which occurs after the Alexander operation. This would be the case if the operation had been done according to Alexander's method.

Various vaginal operations have been devised. Thus, Duhressen's operation, which consists in making a vertical incision through the mucous membrane, from just above the urethra to the cervix, pushing off the bladder until the peritoneum is reached, then the introduction of a suture as high

up as can be reached, dragging down upon this, and a second suture introduced near the fundus of the uterus, without opening the peritoneum, the ends of which are carried forward through the vaginal wall. Other sutures may be introduced in a similar way to supplement this, by which the fundus of the uterus is held forward. The operation may be more effectually and quickly practiced by cutting through the peritoneum and drawing down the fundus, which is stitched, as has been suggested. The operation, however, has been found to greatly increase the danger in subsequent parturition. The fixing forward of the uterus interferes with its elevation in gestation, so a case of impaction results, and where the woman goes to full term, the irregular contractions cause the lessened force in the delivery of the fetus, and increase the danger of abnormal positions. Not infrequently a shelf or hood of the uterine wall projects in such a way as to render the delivery by instruments exceedingly difficult, so the danger to the life of the fetus and mother is greatly increased. The round ligaments may be shortened through the vaginal incision; or the round ligaments may be drawn down and fastened into the vaginal wound. Gottschalk's operation consists in shortening the utero-sacral ligaments, by which the cervix is drawn upward, and consequently the other end of the lever must fall forward. In cases of prolapse of the uterus, where the utero-sacral ligaments are very greatly relaxed, the internal shortening of the round ligaments, or the fixation forward of the uterus by suspending it to the abdomen, may prove unsatisfactory. The better plan in such cases would be to take a stitch on either side in the utero-sacral ligament, by the shortening of which ligaments the cervix is held upward, and consequently the fundus falls forward. In these cases of relaxed vagina and long utero-sacral ligaments, if the Alexander or ventro-suspension operations alone are done, the uterus sags down, drags upon the band of adhesion and the patient suffers very great discomfort, which can be obviated by the shortening of the utero-sacral ligaments, as we have suggested. It is evident, then, from this talk, that it is necessary to adapt our means of treatment to the particular conditions which may be before us.

Hay Fever. Müller of Vienna treats chronic hay fever by the use of the following formula:

℞	Menthol, ...	3 gms.
	Resorcin, ...	3 "
	Alcohol, ...	14 "

His patients came from the United States and England. They were all more or less neuropathic, and were subject to gastro-intestinal troubles. As he always believed that there was a close relationship between gastro-intestinal disturbances and hay fever, he at once treated the cases by administering alkaline mineral water, using massage and other well-known forms of treatment in that line. In addition, he applied a solution of silver nitrate to the nasal cavities by means of a brush, and irrigated with 7 or 8 liters of water, after which he applied the above solution.

TREATMENT OF SYPHILIS.

BY J. D. THOMAS, M.D.,

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Empiricism enters but little into the treatment of syphilis. To those familiar with the disease, there exists quite a uniformity of views with regard to the lines of treatment to be followed—when differences do exist, they relate principally to matters of detail only.

The treatment of syphilis is regulated by its different stages and, somewhat, by the idiosyncrasy of the individual.

I shall consider, first, the treatment of the primary sore—the chancre; second, the secondary stage; third, the declining stage; and, fourth, the tertiary or sequelar stage.

As stated heretofore, the only local treatment required by the chancre is cleanliness; this is effected by the application of peroxid of hydrogen, followed by black wash or calomel powder. Any of the antiseptics, when not too irritating, may be substituted. Cauterizing the lesion with nitric acid, etc., is absolutely bad treatment. Excision is recommended (but seldom practiced) by some. The gentle cleansing, as above indicated, of the chancre keeps the sore in a condition that is quite tolerable; however, it does not cause any diminution in the size of the neoplasm, nor does it insure the healing of the abraided or ulcerating surface, but as soon as specific treatment is instituted, which is usually after the eruption appears, an improvement in the sore takes place very promptly—the induration begins to melt away and the surface of the chancre heals. This logically brings up the question whether it is proper to treat the initial lesion, before the appearance of the eruption, by mercury internally. The authorities advise the withholding of constitutional treatment until the eruption of the secondary stage appears. The reasons advanced are that the disease may be obscured by so doing and the physician and patient remain in doubt as to the actual existence of the disease, and, in the next place, as the poison does not enter the blood until the period immediately preceding the eruption, it can have no neutralizing or destructive effect upon the germs. Unless one is sure of his diagnosis, I believe that constitutional treatment should be withheld until a positive diagnosis is arrived at. However, the cases are exceptional where we are not able to form a positive opinion in from two to four weeks in advance of this period. Again, there are many cases where our diagnosis is strengthened by confrontation, *e. g.,* Mrs. C. presented herself, on June 19th of the present year, for a sore throat. On investigation, I found her broken out with the eruption of syphilis. She pleaded ignorance as to its source. I examined her husband, but at this time failed to find any evidence of the disease. Seven days afterward he presented himself, when a sore was

found in the sulcus behind the corona glandis. In about a month after the appearance of the eruption in the wife it appeared in the husband. A little explanation upon my part, to the wife, dissipated her ignorance as to its source in her case. Here, in the case of the husband, there was very little chance for a mistake in diagnosis, and early constitutional treatment could be practiced.

As soon as the diagnosis is made the patient should be placed upon specific treatment, without waiting for the eruption to appear. The fact that the eruption is modified by early constitutional treatment is the strongest argument in its favor. Even if the secondary symptoms are mitigated under treatment, if the patient is closely observed, as should be, enough of the symptoms will present themselves to prevent any doubt.

The poisonous fountain is in the chancre, and this has full play until it is antagonized by mercury. If we wait until the eruption appears, the patient is permitted to receive into his blood the accumulated force of the poison from the chancre, for the latter is permitted to proliferate unmolested. But if specific treatment is instituted, a perceptible improvement will be noticed in the chancre—the area of induration will contract and the superficial abrasion or ulcer will undergo the process of healing. This is an important fact to be utilized when the chancre is situated upon the lip or any of the exposed portions of the body. The early administration of mercury is not intended to neutralize the poison in the blood, for it is not there as yet, but is to be carried by the blood to the chancre and thus modify or antagonize the poison *in loco,* and hence is more efficient than excision, the object of which is to remove the seat of poison from the action of the absorbents.

In the treatment of the secondary stage—the eruptive, the active stage—there is only one curative remedy—mercury. There are many salts of this metal described in the pharmacopia; but, after all, the mercury is the curative agent. Some prefer one preparation, others another. The rule is to administer that preparation which best agrees. The protiodid is probably administered more frequently, and by a greater number of physicians, than any other, and simply for the reason, if given in proper doses, that it usually agrees. The amount to be administered is governed entirely by the effect and result in each individual. I usually give, at first, one-and-a-half grains in the twenty-four hours—one-half grain after meals. If with this dose there is no discomfort and the improvement is satisfactory, the dose is not increased. After the eruption disappears, the dose is decreased one-half and so kept until the enlarged glands disappear. Sometimes it is necessary to increase the dose to one grain three times a day, when the disease has a tendency to resist treatment. I prescribe one-half grain *tablets,* the patient taking from a fraction of one to two or more at a dose, thus making the dosage convenient without change of prescription. This method of administration is satisfactory to the physician and agreeable and convenient

for the patient. If the protiodid should cause griping, then a small amount (one-fourth to one-half grain) of opium could be combined with each dose. However, under such circumstances, I prefer changing the preparation to, say, one-tenth grain of the bichlorid or biniodid, or two grains of the tannate, three times a day. Where there is considerable malaise and anemia, I prescribe the following, viz.:

℞ Hydrarg. protiodid, ... gr. v-x
Strych. sulph., ... gr. ss
Ferri. sulph., ... gr. xx
Pepsin pulv., ... gr. xl
M. Ft. in capsul. No. XX.
S. One capsule after each meal.

With my patients I insist upon giving them at least two courses by inunction, the first one during the early eruption and another later, as convenience allows. The entire body should be gone over, using one-half dram of unguentum hydrargirum (U. S. P. freshly made) at bed-time, making the application to different areas of the surface of the body successively. The syphilitic eruption is accompanied by a certain amount of infiltration, the inunction acts directly upon this infiltrate and lessens the liability to gummatous or tubercular sequelae.

(*Treatment to be continued.*)

THE DIAGNOSIS AND PROGNOSIS OF CHRONIC ASTHENIC GASTRITIS (ORDINARY CHRONIC GASTRIC CATARRH).

BY BOARDMAN REED, M.D.,
Philadelphia, Pa.

WITHOUT attempting to go deeply into the mooted questions relative to the etiology and pathology of the various forms of inflammation of the gastric mucous membrane, with its complications and results, I will discuss with you at this time as plainly as possible the more practical aspects of the familiar type of chronic catarrh of the stomach.

While in its severe typical form it is not as prevalent in this country as in Europe, for the reason probably that there is a less widespread abuse of alcoholic liquors and tobacco here, mild forms of the affection are common enough and often pass unrecognized. It is very frequently treated as nervous dyspepsia with drugs or rest cures, and sometimes by external hydrotherapeutic measures mainly, until finally, when the intestines have become

involved in the catarrhal process, and serious impairment of the general nutrition has resulted, special advice and treatment are sought.

The claim may be very properly made that at least the more common diseases of the digestive system should be treated by the family physician. This is emphatically my own view, and because of it I am endeavoring to simplify and make plain the modern exact methods which are indispensable in the diagnosis and treatment of such affections.

Symptomatology.—The symptoms of a mild asthenic catarrh of the stomach are briefly those of what is commonly called flatulent dyspepsia. They include fullness and vague uneasiness, amounting sometimes to pain in the gastric region, coming on shortly after meals and followed a little later by more or less copious eructations of gas, which may be sour and offensive in taste and smell. There is usually some impairment of appetite, which may go on to complete anorexia in advanced cases, with occasional nausea. In the alcoholic cases and those complicated by marked muscular atony or dilatation of the stomach, there is vomiting of sour fermenting ingesta—sometimes of glairy mucus only. Vomiting is rare in other cases except in acute exacerbations. Heartburn and water-brash may or may not be present. The tongue is usually more or less coated, with an accompanying bad taste in the mouth. But none of these symptoms are diagnostic. You may have a foul tongue and breath from an unhealthy mouth and nasopharynx as well as from a diseased liver and intestines, without catarrh of the stomach, especially when there is gastric fermentation from other causes; and, on the contrary, there may be a clean tongue and the absence of bad taste or belching with a pronounced gastric catarrh, though it is truth to say that this latter combination is much more rarely seen in the form of gastritis now under consideration than in the acid form, in which there is uniformly present an excessive secretion of the gastric juice, along with a large quantity of mucus.

Many and diverse nervous symptoms, including frequently out-and-out neurasthenia, always complicate fully developed and advanced gastric catarrh and when the case has not been actively treated in the beginning, the intestines are sooner or later affected. Then either constipation or diarrhea, or these two conditions in alternation, will almost surely develop.

Diagnosis.—It is not possible to make a certain diagnosis of chronic asthenic catarrh of the stomach without the use of the tube and the more important quantitative tests of the stomach contents hitherto described in this series of talks. The advanced cases with vomiting and pain can easily be confounded with cancer or ulcer, and the earlier or milder ones are constantly mistaken for nervous dyspepsia. Then, even where occasional vomiting of large amounts of mucus without coexisting pain, tumor, cachexia or emaciation make it probable that a catarrhal inflammation exists rather than either ulcer or malignant disease, you would have no means of determining, except by testing the stomach contents, whether the process were

on the one hand a proliferating one, accompanied by an excessive secretion of HCl and demanding the blandest possible diet with alkalies and sedatives in the way of medication, or, on the other hand, the contrary condition of degenerating glands and a lessening of the HCl and ferments, which would call for a more stimulating diet and a more decidedly tonic medication, including the mineral acids, pepsin, antiseptics and astringents. Besides, while in acid gastric catarrh abdominal massage would be contraindicated except in the form of the lightest and most superficial rubbing (effleurage), in chronic asthenic catarrh of the stomach energetic kneading (petrissage) of the whole epigastric region is very beneficial and often a curative agent of the utmost value.

The sample of stomach contents brought up an hour after the Ewald test breakfast will show you at a glance whether the meal has been properly digested into a uniform thin fluid, as well as give you a rough idea of the amount of mucus in the organ and its probable source, and will enable you to ascertain by chemical tests the total acidity, the proportions of free and combined HCl, the presence or absence of lactic acid, the amount and activity of the pepsin and rennet ferment present, and the extent to which the starch has been converted by the salivary ferment. By a microscopic examination you would learn the degree of microbic infection, and possibly something as to the condition of the epithelium. All this and more you can do if you wish to be very thorough, but if you will merely determine, by the simple tests already described, the total acidity and the amount of free HCl, if any, you will be able to decide whether in case of a great abundance of mucus, you are dealing with an acid or asthenic catarrh of the stomach with a deficiency of the acid gastric juice. With a percentage of free HCl of .060 to .100 or more, with much mucus which you are able to satisfy yourself beyond reasonable question is of gastric origin, you should infer an acid gastritis. If the free HCl is constantly below .030 under the same conditions the catarrh would be of the asthenic type. If the percentage were between these figures the form of gastritis would have to be determined by the microscopic findings or the later developments of the case. In case free HCl should be absent, you should test for lactic acid, which if present in decided amount would awaken a suspicion of cancer. If there is an entire absence of mucus in the sample of contents brought up, there is not likely to be any inflammation of the gastric mucous membrane (though it might be in the terminal stage of atrophy), and any aberration from the normal in the amount of the HCl and ferments could then be attributed to nervous causes, except in the case of the almost entire absence of all the elements of the gastric juice, including the rennet ferment with a total acidity of not over 10 or 12, in which case you would be justified in diagnosing gastric atrophy, especially if the patient were very anemic and emaciated and cancer could be excluded.

But in case you find in the sample of stomach contents a moderate

amount only of mucus and you do not obtain any fragments which under the microscope reveal diseased epithelium, the question is not yet settled. You will then need to proceed to wash out the stomach, following the methods described in one of my former talks. If then, after cleansing away all remains of food and the coarse lumps of mucus which will have usually been swallowed, you bring up more which is thinner, paler and in fine flakes or delicate strings, you may decide, according to Riegel and others, that it comes from the gastric mucous membrane and, therefore, signifies chronic catarrh of the stomach.

According to my own experience, however, this may indicate only a transient catarrhal process, involving some one or more portions of the gastric membrane and capable under treatment of complete cure within a few days, just as often happens with slight catarrhal attacks in the nose and throat. My reason for this opinion is that I have frequently seen such mucus at the first lavage, which after washing out three or four times disappeared entirely, so that subsequent washings brought up no mucus at all. A diagnosis of chronic gastric catarrh cannot, therefore, be based upon even the symptoms and macroscopic findings in the wash water combined until after at least three or four washings, unless the symptoms are very pronounced, as in serious cases, or the amount of mucus is very large. Fragments which under the microscope may show the condition of the epithelium are more likely to be found in the wash water after lavage than in portions of the stomach contents after test meals. But this, too, is a somewhat uncertain dependence, and negative results, such as finding pieces of glandular tissue showing normal cells, is no proof of the integrity of the entire membrane.

The Prognosis, like that of the acid form, is good or bad according to the stage and grade of the affection as well as the age of the patient, and according to the ability and willingness of the latter to make sacrifices and patiently carry out a somewhat troublesome treatment. Those who desire to be cured without help from a tube, and especially without much change from the habits of eating, drinking and exercising, or more often, not exercising, which brought the disease upon them, may be safely promised that they will keep their gastric catarrh to the end of their lives, which will generally be considerably shortened thereby. Cases in which the glandular structures have not been much damaged and in not too old or debilitated persons, can usually be cured in a few months, when the treatment which we shall hereafter describe is faithfully and persistently carried out.

SELECTION.

THE VALUE OF THE PULSE IN DIAGNOSIS AND PROGNOSIS.[1]

BY HENRY JACKSON, M.D.,
Boston.

THOUGH I have no new theory to advance as to the value of the pulse in diagnosis, yet I desire to bring the subject up at this meeting because to me it seems a matter of the greatest importance, and one perhaps that we do not consider as carefully as it deserves. The pulse is the final index of the vital capacity of the individual, and therein allows us to judge of the resistance to disease of the individual patient at a stated time: our patient may have a diseased heart, one much weakened by organic valvular disease or by degeneration of the muscular substance dependent upon disease in the heart itself or upon some toxemia, but if the heart is able to drive the blood through the system for the time at least death is not imminent. Therefore the pulse is, as stated, the final index of what the heart can do; so long as the pulse is of fair quality the system is supplied with blood and life is possible.

In diagnosis it is not my wish to discuss the value of the pulse in the various forms of organic heart disease, as, for instance, the Corrigan pulse in aortic disease, and the small thready pulse of mitral stenosis, but rather to consider its value in the diagnosis of some of the more important and often obscure general diseases, especially typhoid fever, miliary tuberculosis, cerebro-spinal meningitis and other diseases of the brain and its membranes.

The pulse of typhoid fever is in uncomplicated cases not very rapid, rising somewhat with each access of fever, but averaging 90 to 100 or less in cases of moderate severity which run their course without untoward accident; under prognosis I shall speak at greater length of the inestimable value of the pulse as an index of the advent of dreaded complications and the exhaustion of the patient by the toxic effects of the specific organism of the disease.

In acute tuberculosis we have a very different picture; the pulse is rapid, averaging 120 or more long before the patient reaches a critical stage of the disease. In typhoid fever the pulse may temporarily be 120, but it never remains for several days at this point unless the patient is severely sick, whereas in general tuberculosis we find great rapidity of the pulse for days, and even weeks, in a patient presenting no signs of immediate dissolution, often very comfortable and anxious to be up and about the room. The rapidity of the pulse in general tuberculosis is of much value, as in both diseases the course of the temperature may be similar, in both diseases there is an absence of leucocytosis, and often the general condition

1 Read before the Massachusetts Medical Society, June 13, 1899, and recommended for publication by the Society.

of the patient may leave us much in doubt, though in the one hebetude is usually much more marked than in the other. Of course, the Widal reaction in the one case, and tubercle bacilli in the other, may, if present, give us an absolute diagnosis.

In cerebro-spinal and tubercular meningitis the pulse may be almost pathognomonic; in the early stages, during the time that the vagus is stimulated by a moderate degree of irritation, the pulse is slow, or rather, what is the important point in diagnosis, is slow in proportion to the general condition of the patient. To take a case we have before us, a patient who for a day or so has had a moderate fever, who is evidently very sick, with perhaps vomiting and severe headaches; yet we find a pulse of 70 to 90. If the case were typhoid fever the pulse would be more rapid; the slow pulse in the case under consideration is, however, slow because of the direct action of the products of inflammation on the vagus. Therefore, the pulse is no criterion of the general condition of the patient. If there is added to the slow rate an occasional intermittency, we have a still greater assurance that the pulse is dependent upon some direct pathological lesion, and can by no means be considered as an index that our patient is not seriously ill, as is suggested by his general condition.

It is not an invariable rule that the pulse is slow in the early stages of meningeal trouble, but if not continuously slow we find that the rate varies much without any corresponding change in the condition of the patient and independently of the degree of the fever. I would cite two cases seen in consultation, illustrative of the value of the pulse in meningitis. Several years ago I saw in consultation a young child who had been sick several days, was somewhat stupid, had vomited, had fever, and seemed to be very sick: the pulse was 100, and intermitted occasionally. I suggested tubercular meningitis as the most probable diagnosis, chiefly perhaps on account of the pulse, a symptom that the attending physician had looked upon rather as his mainstay in hoping for a favorable issue of the case. My diagnosis was correct. On the other hand, I saw this winter a case where cerebro-spinal meningitis was certainly a possible diagnosis, and yet a rapid, regular pulse made me very doubtful as to the correctness of the diagnosis, and complete recovery in a few days convinced me of the truth of my impressions.

The slow pulse is only seen in the early stages of meningitis, as later in the course of the disease, when the vagus has been paralyzed by pressure or by disease of the nerve itself, we find an extremely rapid pulse, as the inhibitory action of the nerve has been destroyed; to use a metaphor, the engine runs with the throttle wide open.

In cerebral hemorrhage the pulse may again be of great value, when definite symptoms are wanting, as paralysis and allied phenomena; that is to say, in cases brought to a hospital in a comatose or semi-comatose condition, cases so aptly described by Mr. Ernest Hart as "drunk or dying." In alcoholism the pulse is rapid, in cerebral hemorrhage, slow; and hereby,

as in a case I wish to cite, we may make our diagnosis. During my last service a man was brought into my ward by the police: he was unconscious, was tossing about the bed, was flushed. The only history obtainable was that two days previously he was found in a doorway, taken to the station house, where the diagnosis of intoxication was made, then was removed to the city prison, whence he came to the hospital. Careful physical examination showed no fracture of the skull, no evidence of external trauma; strong stimulation of the orbital nerve at its exit gave evidence of a slight left facial paralysis and the left side was moved less vigorously than the right side; the neck was a little stiff. Leucocytes, 12,800; lumbar puncture, negative; temperature, 99°. His pulse was 40, a factor that to my mind rendered simple alcoholism impossible. The evidence of paralysis was slight and not easy to obtain, the pulse was evident. The man died the day he entered, and autopsy showed fracture of the skull and extensive laceration of the brain, with subdural hemorrhage. In view of the diagnosis that I made, I was criticised because I had not suggested trephining; I considered the matter and decided against it, because the severe general symptoms without marked paralysis made it evident to me that the man was suffering from extensive cerebral trouble, rather than from total destruction of a limited area, which might be amenable to operative procedure.

Dr. Bowditch has recently called attention to the value of a rapid pulse in the diagnosis of early tubercular trouble. On the other hand, an extremely rapid pulse without evidence of serious disease may be suggestive of exophthalmic goiter, as in a case described to me in which later goiter developed.

In many other diseases the pulse may assist us in forming our diagnosis, as, for instance, in the early diagnosis of acute follicular tonsillitis and diphtheria, the one usually associated with high fever and rapid pulse; the other in the beginning often giving rise to only slight fever, while the pulse may not be markedly quickened unless toxemia has already taken a severe hold upon the patient.

I have spoken of the value of the pulse in the diagnosis of typhoid fever, but in prognosis we have in the pulse what I believe to be an infallible guide. In uncomplicated cases the rate of the pulse is slow relatively to the degree of the fever and the general condition of the patient. When the pulse is continuously rapid, the prognosis becomes proportionately grave, with the increase in the rate, though no other alarming symptoms arise to render us doubtful as to the outcome of the case. Leaving out of consideration hemorrhage and perforation, a rapid pulse is an index that the patient is in danger of succumbing to the specific toxemia produced by the disease. The pulse is to us an index of the effect upon the individual patient of the poison of the typhoid, and is of far greater value than any other one symptom or any group of signs or symptoms.

In my early student days I read an article, I think by Dr. Wilson, of

Philadelphia, stating that in typhoid fever the danger line was reached when the pulse registered 120; and all cases that I have seen since that day have only confirmed in my mind the great dependence to be placed upon this axiom. I have seen patients die who had only a rapid pulse as indicative of danger, while again and again I have seen patients recover where the pulse ran from 110 to 120, yet they were very stupid, had involuntary passage of urine and feces and perhaps frequent vomiting. I am so sure of my ground in this matter that in the individual case I dare to make a favorable prognosis if the pulse is slow, no matter how unfavorable the other symptoms may be. On the other hand, a rapid pulse, independent of any complication, as hemorrhage or pneumonia, causes me great anxiety.

After careful consideration of this matter in a considerable number of cases, I feel convinced that the danger line is reached when the pulse becomes 120. Of course many cases recover when the pulse is rapid, but not without a severe struggle for life.

The remarks which I make as to the prognosis in typhoid do not refer to cases complicated by intermittent diseases or by perforation and hemorrhage. In such instances, the value of the pulse lies rather in diagnosis than in prognosis.

A sudden rise of the pulse without apparent cause suggests hemorrhage, especially if accompanied by a fall in the temperature. In this connection we must remember that the fever may fall by crisis, but in such instances with the fall of temperature comes a corresponding fall in the pulse, and the general condition of the patient is decidedly favorable.

In perforation the pulse is of the greatest value, as in the following case. Last summer, at the time of my visit, one of my patients was perfectly comfortable with a pulse of 80: at half-past one my house physician, Dr. Stevens, telephoned to me that the man had a pulse rising rapidly, had pain in the right side of the abdomen, an access of fever, with an expression of anxiety. Examination showed no blood in the bowel, the pulse was 120, there was a leucocytosis of 15,000, and there was rigidity of the right side of the abdomen. The surgeon who saw him in consultation agreed with me in the diagnosis and found a perforation when he operated at four o'clock. In this case the leucocytosis was of great value, as I have never seen leucocytosis in an uncomplicated case of typhoid fever. Hemorrhage was ruled out by the rise in temperature, and the absence of blood by rectal examination.

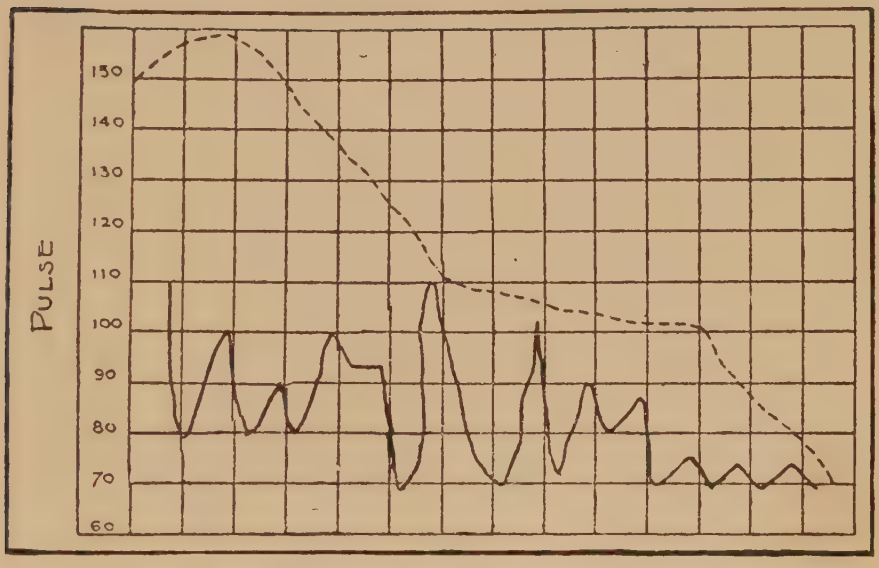
The pulse may be rapid in typhoid fever in other complications, as otitis media and phlebitis, without rendering the prognosis unfavorable: whereas in acute inflammation of the parotid the prognosis is grave, more so, I think, than when pneumonia or pleurisy is the complicating pathological factor.

In convalescence the pulse is often rapid, and then of no serious import; it is the rule that a patient will pass through a severe typhoid with a pulse

not more than 110, and when he first begins to get about have a pulse of 120 or much higher, without the slightest indication that we have any serious danger to combat. Further, many slight troubles in convalescence, as constipation, excess in diet, fatigue from seeing friends, cause a sharp rise in the pulse.

I have once seen a slow but very poor pulse in typhoid in a man that was seriously sick; examination of the heart showed that the pulse was not a sufficient index of the action of the heart, in that many beats were so feeble and inefficient that the wave was not transmitted to the wrist.

In the first volume of the medical and surgical reports of the Boston



CASE I. Parietal disease of the heart. Dotted line shows the apex beat.

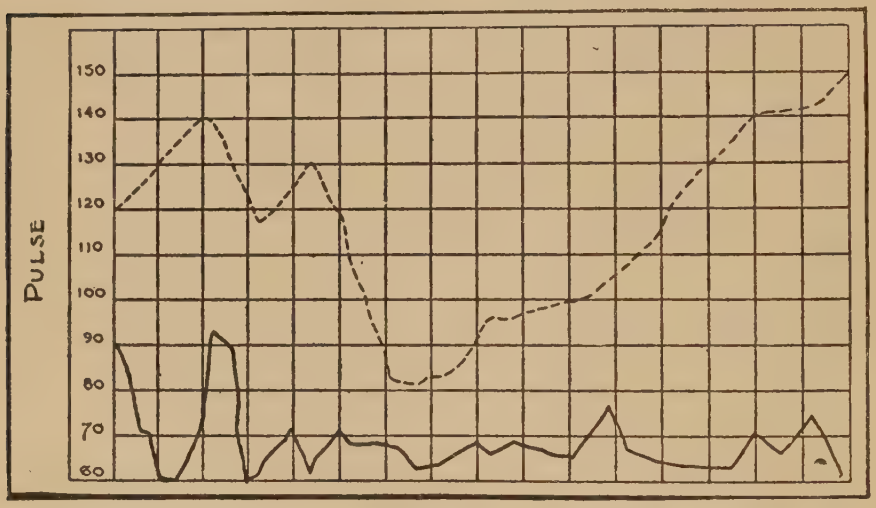
City Hospital is a valuable article upon typhoid fever, by Dr. Upham. He speaks of the prognostic value of the pulse and states that in 65 cases that recovered the average highest pulse was 108, while in 14 fatal cases the average highest pulse was 140.

I have looked over a large number of charts of typhoid fever cases in the Boston City Hospital, and found the same relative proportion of deaths to the pulse-rate.

Finally, I wish to quote from Dr. C. Ellery Stedman's valuable essay on typhoid fever, published in the third series of the City Hospital reports. In this essay Dr. Stedman says, "Temperature for diagnosis is invaluable. For guidance during the disease I rely on the pulse." "I have seen no patient die whose pulse has not reached 120, twenty-four or more hours before death," and finally, "In these ten years the pulse has given the warning of ap-

proaching trouble even when the temperature has signified nothing untoward."

I wish to call attention to one very marked sign of cardiac weakness that so far as I know is not mentioned by most writers. Dr. Whittier has referred to it in a short article in the *Boston Medical and Surgical Journal.* Namely, a discrepancy between the rate of the heart beat and the pulse as felt at the wrist; in many cases it is difficult to count the pulse because of its irregularity or the constantly changing rhythm, though we are conscious that a feeble pulse is occasionally felt beneath the finger, but in the cases under consideration no pulse wave is felt. This condition may be said to represent



CASE II. Dilatation of heart, probably parietal disease. Pulmonary infarction. Death. Dotted lines show the apex beat.

the acme of cardiac weakness and may be responsible for some of the cases in which a slow pulse is reported in fatty degeneration of the heart. This discrepancy between the rate of the pulse and the apex beat I have seen frequently in great dilatation of the heart, dependent upon disease of the myocardium, much less often in valvular disease of the heart. I have noticed the same phenomenon in acute degeneration of the heart as seen in infectious diseases, notably in typhoid fever and in diphtheria. In diphtheria it may be seen during the acute stage, and also in the serious cases of cardiac weakness which appear late in convalescence, perhaps dependent upon diseases of the nerves regulating the action of the heart, similar to the specific neuritis which causes paralysis of the muscles of the nasopharynx or the muscles of the extremities.

The following cases give a good illustration of the phenomenon:

CASE I. Man, forty-five years. Great alcoholic excess; short of breath

for six months; great general edema; cyanotic. Pulse irregular, intermittent; heart dilated; at the apex was a systolic murmur. He gradually recovered and was discharged in a month. On entrance the apex beat was 160, while the pulse was 110. For ten days the apex was much more rapid than the pulse, while later in convalescence they coincided. (See Chart I.)

Case II. Man, forty-five. No alcoholic excess; no rheumatism. Arteries sclerotic. Heart much dilated. Great improvement at first in hospital. Then many attacks of pulmonary infarction; acute and rapid dilatation of the heart, great edema and death. (See Chart II.)

These two charts are illustrative of the condition of great weakness of the heart in which a large proportion of the beats are so feeble that no wave is transmitted to the wrist.—*Boston Med. and Surg. Jour.*

CORRESPONDENCE.

THE THEORY OF PUNISHMENT.

To the Editor of The International Medical Magazine:

The growth of crime in every phase is one of the phenomena of our higher civilization which is attracting the careful study of reflective scientists. It was Madame de Stael who said in her "History of the French Revolution" that few men understood the history of their own times; and this remark is probably as pertinent to the conditions a century later as to her own. A new civilization is being launched in a new world which has begun to permeate the parent nations, and mankind is passing into a new moral, social and political regime where the rights of the individual are becoming constantly accentuated.

This great change is not coming by any sudden explosion of moral and political insanity, which became epidemic in France and destroyed everything in its path—clergy, monarchy, aristocracy and ancient, established usages in the moral life of the nation. But we are none the less being rapidly placed in new economic and social relations; and every nation of the earth, to a greater or less degree, shares in the unrest. Few of us have realized that the war in Cuba was begun by the operation of economic conditions in the old world; and now, as the result, we are drawn into the contest for supremacy among the nations of the earth. What affects the nation as a whole affects the individual in his integral portion, and no better illustration of this truth can be found than in France, where the peasant of the country is seeking, like the Parisian, to shirk the duties of domestic life.

National decadence threatens; but it begins in the individual, and the cure will come from the same source.

In our own country, crime and insanity are the weather gauges of our civilization, and the basis upon which to estimate our stability for the future. The medicine of the past quarter century has taught this economic truth —that crime is a social disease which must be treated, and that an occasional radical surgical operation, like decapitation, neither cures nor ameliorates. As measures for the improvement and punishment of criminals our institutions are without results, except in a negative protective sense. Punishment by any means in no way limits crime. Where the most horrible punishment is meted out, the worst crimes increase. The only good accomplished by these executions is the removal of the offender from the living and the consequent limitation of his depredations and that of his progeny. As a relief to society, therefore, and a remedy to crime, our penal institutions accomplish nothing. In accepting this fact from our prison experts, we must cast about for a new basis upon which to operate against the vicious tendencies in humanity which the terrors of hanging and burning have in all time failed to cure. We are necessarily forced to the theory of prophylaxis from that of punishment, and it will not be long before we shall witness its operation. What right has the criminal to visit suffering upon the unborn and those near him any more than he can assault with impunity any one on the street? There are some so-called inalienable rights of man that are going to be righteously curtailed. If a man or women cannot give a child a clean pedigree it is pertinent to inquire what happiness to the child or good to the world is to come from this outrageous injustice. The greatest injustices cannot be reached by earthly courts, as every physician knows.

A patient of mine, of excellent character, married a man who had at one time, unknown to her, served a sentence in the penitentiary; and, naturally, their son is a professional thief. Had a marriage law made this man's record even a necessity to a license, or a bar to his marriage, this calamity would have been averted. In another case, a syphilitic, with cerebral symptoms, married against my advice. This is an outrage against society and the unborn.

The first step has been taken in Ohio, where a marriage law was defeated. That law was intended to govern just this abuse—the marriage of the unfit. That it is an eminently practical law cannot be questioned; and as people witness its benefits it will be extended in its scope.

Very specious arguments are advanced against measures intended to limit the exercise of some of man's supposed inalienable rights, but the inexorable survival of the fit will make the prevention of crime and insanity a blessing and a mercy to those who otherwise must carry a life-long punishment about. Such a law is the only alternative against the overwhelming burden of crime, insanity, pauperism and incompetency. M. M.

REVIEW OF MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

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On the Occurrence of Rheumatic Fever without Arthritis. Hawthorne (*The Practitioner,* Sept., 1899) points out the difficulty in diagnosing rheumatism in the absence of joint lesions. Continued febrile movement without discoverable cause is not uncommon, and may be due to typhoid fever, tuberculosis, or, perhaps, pernicious anemia, leucocythemia or acute leukemia or rheumatism. Of course a blood examination will serve to eliminate some of these, but rheumatism will often be overlooked, for it seems to be a deeply-rooted notion that a parallelism exists between the extent and severity of the arthritis and the range of the febrile movement. While it is true that they are generally associated, that the fever is due to the arthritis is only partly true. It would be better to insist on a common cause and then one is better prepared to admit the possibility of either occurring alone. The author cites a case of a female, aged 18, with headache, backache, thirst, anorexia, sore throat, temperature 103.6°. Examination showed slight faucial injection, some tenderness on pressure over knees and shins, no redness or swelling of joints, no skin eruption, no apparent disease of the abdominal viscera, no vaginal discharge, past or present. No anemia, skin moist, but no free sweating. Tongue clean, bowels constipated. Thus the condition remained for 10 days, then the temperature became subnormal and remained so for a couple of weeks, when arthritis developed, but promptly subsided under rest. Had this latter occurred simultaneously with the febrile attack, apart from the fact that the joint trouble was limited to one joint, no difficulty would have been experienced in the diagnosis. Though the febrile movement in acute rheumatism usually corresponds to the extent and severity of the joint trouble, it is quite possible to have acute rheumatism without arthritis, as Graves, Sir Thomas Watson, Fuller, Taylor, and others have insisted.

On the Value of the "Fixation Abscess." Bauer (*Virch. Archiv., Bd.* CLVI.) expresses himself very cautiously in regard to the efficacy of the abscès de fixation of the French. These are aseptic abscesses, induced by the subcutaneous injection of turpentine, and are employed in grave

toxic conditions, and their value is said to be due to the leucocytosis engendered. The author used them experimentally in animals and clinically in pneumonia, typhoid fever and erysipelas.

Peritonitis as a Cause of Acute Appendiceal Colic. (*Arch. gen. de Med.*, July, 1899.) Trippier and Pavios suggest a local peritonitis as the cause of acute appendicular inflammation, with pain, vomiting, obstipation, tympany, often met with as the initial symptoms of appendicitis. This local peritonitis may have been due to a primary or secondary inflammation of the appendix, this latter originating in some neighboring organ—as the ovary. The authors reject the theory of the entrance of a fecal concretion into the appendix, also that of Dieulafoy, who argued for an inflammatory closure of the appendix with the formation of a sac; for in the many cases examined they found that no matter how changed the appendix, unless associated with a local peritonitis, "la crise appendiculaire" failed to develop.

Insufficiency of the Adrenals as a Cause of a Symptom-Complex of Acute Course (not Addison's Disease). Sergent and Bernard (*Archiv. gen. de Med.*, July, 1899) describe a group of cases in which the symptoms are those of Addison's disease, but without the bronzing, and suggest that only those associated with pigmentation be called Morbus Addisonii in order more sharply to differentiate them. The condition they describe is due to some destructive process in the adrenal, as carcinoma or tuberculosis, and occurs in 3 forms: (1) Sudden death; (2) acute, with abdominal pain, vomiting, diarrhea, anorexia, exhaustion, ending shortly in death; (3) subacute, gradual and progressive loss of strength with vomiting, anorexia and, perhaps, diarrhea. Attention is merely called to these cases to point out the occurrence of adrenal insufficiency without bronzing.

DISEASES OF THE CHEST.

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Aneurism of Coronary Artery; a Report of Two Cases. Copps (*Amer. Jour. of the Med. Sc.*, Sept., 1899) reports two cases of this interesting and rare condition. The first was in a man about 48 years of age with no history obtainable. The death was sudden. The heart weighed 300 gms. The aneurism was the size of a pigeon egg, just beyond the commencement of the left coronary artery, and was partly filled by a thrombus,

but the lumen was not obliterated. The second case was a man of 39 years, syphilitic and alcoholic, who died of pneumonia. The aneurism was the size of a hazel nut, also in the first part of the left coronary artery. The lumen was not obliterated. In both cases the microscopic examination showed the lesions of a chronic arteritis. Neither had ruptured. Copps collected 19 cases of the affection. It predominates in males (17 to 2). Age has apparently little influence. Two cases occurred in very young children. More cases were under than over 40 years. The etiology is obscure. The diagnosis has never been made during life. It does not give rise to adventitious sounds, and it does not increase cardiac action; and it is doubtful if the affection has any characteristic symptoms. The disease often terminates in death from rupture into the pericardium (11 cases). In the others the lesion was accidentally discovered at autopsy.

Congenital Heart Disease; a Study of Thirty Cases. Townsend (*Archiv. Pediat.*, Sept., 1899) analyzes 30 cases. Thirteen of 19 cases kept under observation died at an average age of 3 years, the youngest being 3 hours, the oldest 9½ years. Of 6 living cases the youngest is 4 months. The oldest is 28 years. Cyanosis was present in all cases, with one exception. Cardiac signs were absent in one-third of the cases. All of these were cyanosed. Two of these came to autopsy and showed marked malformation. In two-thirds murmurs were present, generally diffuse and systolic in time, with or without a thrill, and loudest either at the base or apex. He reports one very interesting case of an Italian woman, aged 28 years, who had been cyanosed since birth, but shows no other symptoms except a soft systolic murmur at the base which was probably functional and disappeared under treatment. She has borne 3 children, 2 of which died at birth and the third is well and not cyanosed. The mother remains perfectly well. This woman's blood was never above the normal in number of red cells. The ductus arteriosus and foramen ovale are open at birth, and to determine whether this condition gave rise to a murmur Townsend examined 100 cases of new-born infants. In but one was a murmur heard. This had disappeared by the seventh day. The number of red corpuscles was increased in all but one of 14 cases, as is found to be the case in cyanosis from other causes. The average blood count in 13 cases was 7,573,585 red cells per c.mm.

Ox Blood as a Remedy. Blech recommends ox blood as a useful therapeutic agent. The blood is caught direct in an antiseptic vessel and beaten for a few minutes with a sterilized glass rod to prevent coagulation. It is then bottled into sterilized flasks. Certain commercial preparations consist of ox blood prepared in this way, to which a little whiskey and dried white of egg has been added. For internal use a little salt and pepper improves the taste, and boric acid (1:1,000) tends toward its preservation. This preparation is an excellent tonic and blood enricher; the dose is 15-30 gms. 4 to 6 times *per diem*, before meals. For obstinate ulcers the external application of a tampon of gauze, saturated in the preparation, is productive of highly beneficial results.—*Pharm. Zeit.*, 43,860, after *Deutsch. Med. Zeit.*

DISEASES OF THE DIGESTIVE SYSTEM.

UNDER THE CHARGE OF

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The Deceptive Standstill in Appendicitis. Dieulafoy (*Bull. de l'Acad. de Med.*, 1899) points out the necessity of an early operation on the following grounds: (1) Grave conditions may be masked by apparent improvement. (2) The sudden disappearance of pain is not always a sign of recovery, but is a very deceptive symptom. (3) The worst pathologic changes may go on while the patient is apparently comfortable. (4) In this condition, the abdomen is distended, the muscles contracted, the pulse still rapid even when the temperature falls; urobilin and albumin are often present in the urine. (5) This deceptive condition may appear at any day of the disease, the second, fourth, and even sixth. (6) These conditions are usually followed by a change for the worse and death.

The Diagnosis of Esophago-Tracheal Fistulas. Kohlenberger (*Deutsch. Med. Wochensch.*, 1898, No. 23; *Centralbl. f. d. Med. Wissensch.*, 1899, No. 32) describes an ingenious method of diagnosing fistula from the esophagus into the trachea, which is not easy except when food swallowed without reaction is afterward coughed up. A patient who had long complained of pain in swallowing was seized suddenly while drinking wine with a feeling as if at the entrance to the stomach something had been torn, whereupon during a severe attack of coughing he coughed up wine and bloody expectoration. It could be established that the patient, who suffered from fetid expectoration, swallowed morsels of food without difficulty, while fluids often provoked attacks of coughing, and by these were brought up again. Nothing abnormal was found with regard to the internal organs. No trouble could be made out laryngoscopically. In order to reach a diagnosis, the following procedure was now tried: An ordinary stomach tube was introduced with the fenestrum turned forward, while the patient was made to breathe deeply. Before the open end of the tube a small flame was held. The flame was then observed to be strongly drawn in upon inspiration and blown outward upon expiration. When the lower end of the tube reached a point 31 c.m. and the upper fenestrum 25 c.m. from the

incisor teeth, the light was suddenly extinguished. From that point on up to the entrance of the stomach the above-mentioned normal conditions were again present. At the autopsy there was found at the corresponding point, that is, at the level of the bifurcation of the trachea, an ichorous ulceration of the esophagus the width of 4 fingers, and opening into the trachea. The ulcer was carcinomatous. Kohlenberger believes that the proceeding just described may be relied upon for the successful diagnosis of esophago-tracheal fistula in every case.

Contribution to the Pathology of Hepatic Colic. D. Mayer, of Carlsbad (*Proceedings of the Congress f. innere Med. in Karlsbad, Allg. Wiener Med. Zeitung,* 1899, No. 36), disputes the statement that every hepatic colic is caused by a cholecystitis, because of a series of experiences described by him from which it must be concluded that other causes may be responsible. In discussing gall-stone colics he attacks the position of those surgeons who advise an early operation. He maintains that it is not always possible to distinguish with absolute certainty those which result in the passage of stones (*erfolgreich*) from those that do not—those that are fruitless (*erfolglos*). This is shown very clearly by such an attack which ends with the passage through of the stone, yet during the days or weeks, while the stone is wandering about, numerous other apparently fruitless colics occur. These the writer designates intermittent (*saccadirte*) gall-stone colics which, he claims, are common, frequently occurring in attacks which closely follow each other and are relieved with difficulty by hypodermics of morphin. Nevertheless, they should not be classed as fruitless. Mayer, referring to the influence of the Carlsbad waters upon cholelithiasis, denies that these waters have any cholagogue action. He thinks that they produce their effects by removing harmful conditions, all mechanical and chemical obstacles to the normal, bile-secreting function of the liver cells; that through a favorable influence upon the circulation in the liver and the gastro-intestinal canal, the inspissated bile is enabled to escape more readily and its flow thus promoted. The flow of bile is assisted by the removal of the chronic constipation and at the same time the diuretic effect of the cooler springs is not to be underestimated, since in chronic jaundice, through a free excretion by way of the kidneys of the bile-producing materials, hepatic intoxication is prevented.

Floating Liver and its Clinical Significance. Einhorn (*Med. Rec.*, Sept. 16, 1899) classifies under the term floating liver the usual downward and inward displacement of that organ. He claims to have seen 30 cases out of 804 patients, or 3.7%, the affection like the displacement of other abdominal organs being much the more prevalent in women. While the corset is a frequent cause, it may result also from pregnancy, the removal of abdominal tumors, falls, lifting heavy burdens, etc. The author reports a number of cases with various symptoms, including those of indigestion, hepatic colic, etc.

NEUROLOGY.

UNDER THE CHARGE OF

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Symptoms Following Lumbar Puncture in Tabes Dorsalis. Babcock (*Amer. Jour. of Insanity,* Vol. LV., No. 4, p. 607), in view of the improvement in the ataxia of general paretics after lumbar puncture, experimented with the operation in 3 cases of tabes dorsalis. The first patient was in the paralytic stage of tabes, and presented the symptom-complex of increased intradural tension. After puncture, the pressure symptoms were much lessened, gradual improvement took place in the gait, and the physical condition was bettered. The second case was one of suspected tabes in which, after puncture, the classic symptoms were quickly developed. A man in the pre-ataxic stage of tabes with associated melancholia was the third patient, and the operation was without any result. Babcock considers the cases experimented on too few for valuable deductions to be drawn, but he thinks that the results obtained suggest both diagnostic and therapeutic possibilities.

A Clinical Study of Twenty-four Cases of Paralysis Agitans. Collins and Muskens (*N. Y. Med. Jour.,* July 8, 1899) reports the observations made in 24 cases of Parkinson's disease, with particular reference to the attributed and apparent causes, the relative frequency, the initial symptom and mode of onset, and the factors influencing the course of the disease. Natives of Ireland were the most frequent victims, their environment being the explanation of this peculiarity. The fifth decade of life was most productive of sufferers from this disease. Direct heredity played an important role, although 16% of the cases studied had a history of indirect heredity. Neither mental nor physical overwork seemed to cause special liability to the disease, although psychic or emotional trauma was active as alleged cause. The characteristic symptoms were found in the patients observed, and the type of the disease was preponderantly bilateral. Purves Stewart's symptom (toe curling) was not observed, although 25% of the patients suffered from painful involuntary muscular contractions. Hyoscin and duboisin are strongly recommended by the authors, especially given hypodermatically. Bromids should not be used. Gelsemium and veratrum viride occasionally influence the tremor and rigidity.

A Case of Narcolepsy. MacCormac (*Lancet, Lond.,* Aug. 26, 1899, p. 565) reports a case of narcolepsy with a possible definite exciting cause. The patient was a young woman who, immediately after having a number of teeth extracted, began to feel unusually sleepy. Soon afterward she be-

gan to sleep under the most varied circumstances, being unable to keep awake. The sleep would last from 3 to 10 minutes, and between the attacks of sleep she felt quite clear, but was readily fatigued. All the organs of the body appeared to be healthy, but mentally and physically she was lethargic. No symptoms pointing to hysteria or epilepsy were present. The patient improved greatly under the use of tonics and nutrients.

A Study of Delirium. Hirsch (*N. Y. Med. Jour.*, July 22, 1899, p. 109) endeavors to dissipate the obscurity surrounding the conception of delirium. He considers its striking features to be abolition of self-consciousness, incoherent conceptions, the presence of sensory and motor irritation. The difference between delirium and dreaming is the transformation in the former of intra-psychic events into motion. The condition is to be differentiated from acute maniacal excitation; from the effects of pathologic passion, especially from melancholic frenzy and raptus melancholicus; from hallucinatory confusion and from certain varieties of weak-mindedness, of confusional dementia and confusion in speech. Delirium almost always indicates inanition, and is usually a grave complication in any disease. The treatment of delirium is determined by the therapeusis of the underlying disease, although remedies directed to the symptom may be employed.

Report of a Case of Complete Monocular Blindness Following an Injury to the Head, Attended by Full Restoration of Vision. W. C. Posey (*The Phila. Med. Jour.*, Aug. 19, 1899) reports a case as interesting to the neurologist as to the ophthalmologist. A man received a severe blow over the left eye, and was stunned for 15 minutes, and suffered excruciating pain in the left eye and temple. The pain gradually ceased. No marks of external violence were observed. About 36 hours after the accident much pain was felt at the back of the left eye, and sight began to fail. At the end of the fifth day after the accident the eye was totally blind and an examination made on the sixth day showed that the movements of the eye were good and that the pupil was slightly larger than that of the other eye and did not respond to direct light stimulus, although it reacted consensually. The left optic nerve head was much paler than the right, the venous pulse was much accentuated, and the veins of the disc and near the disc appeared almost to collapse at the diastole of the heart. The vessels were of good size and the arteries did not pulsate. The right eye was normal. The patient was placed in bed, leeches were applied to the left temple, the bowels were opened by salines, a dram of mercurial ointment was rubbed into his body night and morning for four days, and later strychnia and iodid of potassium were given. The blindness was only transient. It is this transient loss of vision which makes the case important, inasmuch as examples of such a condition resulting from trauma about the orbit are very rare. Three such cases were reported by Nettleship in 1895. In Posey's case no apparent signs of fracture were present, but the pain on blowing the nose, and the throbbing sensation which accompanied it, on the third day after the injury, suggested that a fracture of the wall of one of the accessory

sinuses might have occurred and been the primary cause of the blindness. The lesion was certainly retrobulbar, and was sufficiently extensive to completely interrupt for a time the function of the optic nerve, but the damage to the nerve was transient, as shown by the complete recovery of vision and the return of the nerve to its normal appearance. It seemed probable that the sphenoid was fractured and that neuritis followed. The lesion could hardly have been primarily within the optic nerve, as the impairment of vision occurred comparatively late.

MEDICAL DISEASES OF THE KIDNEYS.

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The Early Recognition of Kidney Disease, Especially in its Reference to Life Insurance. Rockwell (*N. Y. Med. Jour.*, Sept. 23, 1899) holds that a perfectly healthy person does not pass albumin and if this be found, even in very small quantities, at repeated examinations of the urine of an applicant without any other discoverable cause, life insurance companies are justified in refusing the risk, on the ground that the kidneys are probably unsound. On the other hand, large amounts of albumin may be passed after excessive exertion without the existence of any renal lesion. The writer lays especial stress upon the danger of overlooking chronic interstitial nephritis, especially in its earlier stages. Whenever he finds the specific gravity of the urine of any person over 40 years old constantly too low—1.005 to 1.015, especially when obtained during the height of digestion, he expects to find hyalin casts if he looks long enough for them. The urine, even with this low specific gravity, is usually distinctly acid, is pale and clear, containing little or no sediment, in marked contrast to the chronic diffuse form. The diurnal quantity is usually increased, and the solids and urea are diminished in quantity, although the chlorids are not diminished to the extent they are in diffuse nephritis, owing, perhaps, to the fact that anasarca is not so general. The subject often has occasion to rise at night to pass his water. Albumin may be present or absent. It is never in large

amounts, and some observers state that the disease may run its course without its making its appearance. Rockwell thinks, however, that if a sufficient number of careful tests are made it will be discovered. In such sediment as one is able to get, preferably by the centrifuge, may be found hyalin casts, cylindroids, and an occasional leucocyte. Uric acid and oxalate of calcium are fairly constant. Rockwell usually preserves the urine with borolyptol, places a quantity in a conical glass, allows it to remain over night, decants all but a small portion, and puts the remainder in a centrifugal machine, in this way feeling fairly certain of obtaining the casts if they are present. The casts may be so few that only with the greatest care can they be discovered. In the diagnosis of this form of nephritis we are greatly aided by our examination of the heart, for hypertrophy begins early. Arterial tension is high from the beginning, and the second sound at the base is usually accentuated.

The Medical Treatment of Movable Kidney. (*Stengel Univ. Med. Mag.*, Sept., 1899.) Two plans of purely medical treatment of this condition are offered, the first one intended to supply the peri-renal fat which has become deficient; and the second, the support of the kidney by a proper abdominal bandage and pad. The first of these methods is accomplished by forced feeding, and is applicable to those cases where the condition is attended with marked emaciation. A case is reported where, under such a course of treatment, there was a gain in weight in 4 months of 36 pounds, at the end of which time the kidney could no longer be felt and was certainly not movable. In other cases, where there is no emaciation or loss of peri-renal fat, an abdominal belt with a pad attached is employed, the pad to be so shaped and applied as to make pressure upward, backward and toward the right. Two cases are reported as being benefited to a marked degree by this mechanical treatment. H. M. C.

Renal Incompetency. Richter and Roth (*Berlin Med. Soc.*, June 21, 1899) state that it was formerly supposed that if the kidneys were working properly a certain amount of urea, chlorids, etc., would be excreted daily; that, therefore, an examination of the urine would show whether renal incompetency was present or not. This is not always the case, and they recommend the testing of the molecular concentration of the blood serum by ascertaining its freezing-point. The kidneys constantly counteract this tendency by excreting from the blood a concentrated fluid, thereby preventing the accumulation in the blood of an excess of the products of metamorphosis; hence, the constant normal freezing-point of the blood is a sign of the sufficient action of the kidneys. The freezing point of the blood is not more than 0.56° less than distilled water. If it is lower than that it is an indication that there is renal incompetency. Oxygenation of the blood will also reduce its freezing-point, but this can be eliminated by shaking the blood with the oxygen in a test tube. If the low freezing-point is due to a lack of oxygen, it will rise; if it is due to renal insufficiency, it will not be affected by the oxygen.

DERMATOLOGY.

UNDER THE CHARGE OF

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Symmetrical Areas of Solid Edema Occurring in Grave's Disease. Morrow (*Brit. Med. Jour.*, July, 1899) reports the case of a 45-year-old woman suffering from exophthalmic goiter and patches of solid edema upon the legs. In December, 1898, the patient presented such symptoms of myxedema as swelling of the face, thinning of the hair, loss of expression, loss of power in the hands and loss of special sense in the finger tips. There was also marked edema of the ankles, extending half way up to calves. The patient took 5 grs. of thyroid extract on alternate days from January 6th to February 3d. During this period she improved greatly. The case then developed enlargement of the thyroid gland, attacks of palpitation and throbbing, slight exophthalmos and tremor of the hands. Graefe's sign was present and sweating could be easily induced. "On the front and outer aspect of both legs are symmetrical raised areas of swelling, beginning 2 inches above the ankles and extending upward 7 inches. Each area is about 3 inches wide, with sharply-defined, hard edges. The swelling appears to occupy the skin and subcutaneous tissue, is dense to the touch, and does not easily pit upon pressure. The skin covering the areas in question is distinctly hypertrophied, and presents the characteristic changes of elephantiasis." Patches of solid edema are known to occur in Grave's disease, but the author has found no reference to a symmetrical distribution.

The Nature of the Xanthomata. Pollitzer (*N. Y. Med. Jour.*, July 15, 1899) presents an admirable article upon the histology and pathology of the various forms of xanthoma. He maintains that the flat xanthoma of the eyelids is a disease distinct and apart from xanthoma multiplex, which is closely related to xanthoma diabeticorum. The latter two affections bear such close clinical and histological resemblances as to cause the author to look upon the processes as identical. Diabetic xanthoma commonly undergoes involution after a brief period. The nodules of xanthoma multiplex have also been recorded in cases to have disappeared. Glycosuria is absent in a certain number of

cases of diabetic xanthoma. "According to Crocker, in four-fifths of all the recorded cases of xanthoma multiplex above puberty, about 60 in number, there was chronic jaundice, due to severe lesions of the liver. On clinical evidence there is no sufficient reason for the separation of xanthoma diabeticorum from xanthoma multiplex. Adding, therefore, the 25 cases of xanthoma diabeticorum to the above number of xanthoma multiplex, we have a total of 85 cases, in 73 of which a severe systemic disturbance was present. "I think we are justified in regarding xanthoma multiplex (including the diabetic variety) as an irritative process depending on a toxemia of hepatic origin or on that of a still unknown pathological complex, one of whose manifestations is glycosuria." The author then details a description of the histology of flat xanthoma palpebrarum, based upon careful microscopic study. He makes the original and ingenious claim that the xanthoma cell in xanthoma planum is a degenerated muscle fiber derived from the orbicularis palpebrarum and embryonically misplaced in the skin of the eyelids. In support of the myogenetic origin of xanthoma of the eyelids, he offers the following clinical and pathological facts: (1) The absence of any clinical signs of tumor. (2) Its almost exclusive occurrence in the face, where peculiar muscular conditions prevail. (3) Its common arrangement in elongated plaques, whose long axis is parallel to the course of the orbicularis fibers. (4) Its heredity. (5) Its usual development after middle age when degenerative processes are apt to occur. (7) The histologic features of the affection.

Treatment of Pruritus. Du Castel (*Gaz. Médic. de Strasbourg,* No. 6, reported in *Therapeut. Rev. der Allg. Wr. Med. Ztg.*) advises in the treatment of pruritus the internal use of lactic acid in doses of 6 to 20 drops at the beginning of meals. Several cases of eczema with persistent itching responded nicely to this treatment, as did also 3 cases of prurigo of Hebra. The treatment had no effect upon 2 cases of dermatitis herpetiformis nor upon a case of chronic urticaria.

Treatment of Furuncles with Salicylic Acid. Philippson (*Semaine Med.,* No. 23, reported in *Therapeut. Rev. der Allg. Wr. Med. Ztg.*) employs upon large furuncles a 50% salicylic acid plaster which is changed several times a day in order to permit a cleansing away of the accumulations of pus. For this purpose a cotton tampon, moistened with alcohol and ether, is used. The softening of the furuncle progresses rapidly, and after twenty-four hours a necrotic core is usually thrown off. The same plaster promotes formation of granulations and rapid cicatrization. In facial furuncles Philippson advises central boring with the tip of a thermo-cautery, followed by the application of salicylic acid powder, and this in turn by the plaster. To abort small furuncles the author advises moistening with a 2% alcoholic solution of salicylic acid 3 times a day. To prevent the formation of new furuncles, the patient is to bathe each day and then rub into the skin a 2.5% salicylic acid ointment.

PEDIATRICS.

UNDER THE CHARGE OF

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Some Details in the Treatment of Acute Intussusception in Infants. Collier (*The Lancet*, Aug. 26, 1899) believes that the reason for the high mortality in this affection is found in the fact that the true nature of the cases is not recognized early. He first deals with the method of treatment by rectal injection, either with air or with water. He says: "My experience with rectal injection alone has been very disheartening." The figures of Wiggin are then quoted, who found that, in 78 cases so treated, there were 54 failures and a mortality of 75%. The treatment by abdominal section is then dealt with. The writer believes in a small incision with but little exposure and handling of the gut. "The method of reduction through a small incision should not have a greater mortality than the operation for strangulated hernia in children of the same age." Collier prefers, however, a treatment by the combined method, and describes this method in the following manner: "The child being placed under chloroform, Mr. Skevington, the house surgeon, injected water by the rectum, with an irrigator raised to the height of 18 inches above the abdomen. During the injection the tumor could be felt to descend beneath the right rectus muscle. After keeping up the pressure for several minutes, the irrigator was lowered and I made a longitudinal cut over the remainder of the intussusception, which could be clearly felt in the right iliac region, the cut being just large enough to admit the index finger. The finger being introduced, the irrigator was again raised, and I was able to squeeze out, by gentle manipulation, the small remaining part of the intussusception, which to touch appeared irregularly bossed. The operation lasted but a short time and there was little shock. The child recovered." Two other cases are reported, both of which terminated favorably.

Club Foot and its Surgical Treatment. Huntley (*Int. Journ. of Surg. Scie.*, 1899) believes that "all of those deformities, from infancy up to adult life, can be corrected in a manner that is comfortable, profitable and permanent." He states, however, that there will be failures under any mode of treatment, unless the surgeon will study each individual case and select the method best adapted for it. He believed that all cases of congenital club foot in patients under 3 months old can be corrected by manipulation and plaster of Paris without the use of the knife. When the patient is seen at a later age, the following rules obtain:

"Never use a knife on a case that can by manipulation be brought into a state of correction and maintained there without causing great distress to the patient."

"Operate as soon as possible, but remember that maturity is no obstacle to a successful operation."

"Cut the tendo-Achillis first, always subcutaneously, and master the equinus portion of the deformity."

"Do the rest of the operation subcutaneously, if a state of super-correction can be obtained thereby. If not, make a division of the soft parts. . . . If this should fail after great force has been applied, do osteotomy as a last resort."

The preparation for and the steps of the operation are clearly described, and the post-operative treatment with plaster casts is forcefully dwelt upon. Histories of successful cases are given, and photographs of patients and of a wrench of the author's device furnish good illustrations.

Congenital Idiopathic Dilatation of the Colon. Griffith (*Amer. Jour. of the Med. Sci.*, Sept., 1899) reports a case of this rare though interesting affection, and gives a careful summary of the literature. He first excludes the acquired cases from this study (those resulting from habitual constipation, from narrowing of the bowel, such as may be produced by external pressure, from acquired atony of the bowel, etc.); and then similarly dismisses those which have resulted from congenital stenosis of some part of the lower bowel. The author uses the term *idiopathic* to "designate an innate tendency to dilatation which is not dependent upon discoverable organic cause." The term *congenital* includes not only the dilated colon at birth, but also the existence of an early tendency toward dilatation. He confesses that it is sometimes difficult to draw the line between these true congenital idiopathic cases, and those already excluded from the discussion. The author gives a careful synopsis of 24 cases, including his own. *Symptoms.*—In most of the patients, constipation appears soon after birth, and abdominal distension soon follows in its wake; or else these two symptoms appear simultaneously. In most instances, enemata have succeeded in markedly reducing the size of the abdomen. The distension was always tympanitic, and frequently the distended colon could be outlined through the abdominal walls. There was in most cases a decided tendency toward exacerbations, in which both constipation and distension became more marked. Curiously enough, the stools are seldom scybalous, but are usually liquid. Failure of the general health ensues later, and dyspnea may result from pressure. Twenty of these patients were males. *Prognosis.*—While not absolutely bad, it is most unfavorable. *Diagnosis.*—This can readily be made from the above recorded symptoms. Eighteen autopsies and one laparotomy have served to exhibit a remarkable uniformity of lesions. Usually the colon with the sigmoid flexure is enormously dilated. More seldom the distension is confined to a more or less restricted portion of the bowel. The *treatment* is (1) hygienic and (2) operative. The former includes improvement of the general health, massage, electricity, and purgatives or enemata. The use of the rectal tube will often prove efficient in

relieving the gaseous distension. Operative procedures include the formation of an artificial anus (Halstead in Osler's patient, and Ashhurst in Griffith's) and the more severe measure of Treves, viz., the removal of the distended gut, and the joining of the small intestine with the anus.

THERAPEUTICS.

UNDER THE CHARGE OF

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Chrysarobin a Specific for Warts. Fitz (*Boston Med. and Surg. Jour.*, Vol. CXL., No. 26) calls attention to the difference between corns and warts, explaining their structure, and has used this drug in a series of cases, without failure. He makes a daily application of a 10% solution of the drug in either gutta-percha or ether, the surface to be sand-papered each day to remove the keratinized portion of the skin. Little effect is noticed the first week, but it usually cures in about 21 days.

Importance of Salicylic Acid Over the Salicylates in the Treatment of Acute Articular Rheumatism. Ellis (*Med. Times*, June, 1899) describes one case which was promptly relieved when he changed from the salt to the acid. Care has to be used not to sicken the patient, especially when large doses are used. In stubborn cases he has pushed it up to 10 grs. every hour, for 6 consecutive hours, with good result. However, the salts are retained better than the acid, and when used he prefers the combination with ammonia to that with soda.

Quinin in Malaria. Flackler (*Jour. A. M. A.*, July 29, 1899) has not had brilliant results in cases of malaria, in which he administered quinin hypodermically, and reports a series of 3 classes: 3 cases in the first, where hypodermic injections of 15 grs. of quinin bisulphate, twice daily, controlled the paroxysm, and gradually diminished doses, for a week, prevented return; second class, 7 cases, where 20 - 30 grs., usually given morning and evening, controlled the paroxysm; third class, 10 cases treated ineffectually

by hypodermic medication, while they were effectually cured when the drug was administered by the mouth.

Treatment of Eclampsia. DeLee (*Obstetrics,* Vol. I., No. 8) believes that morphia in ¼gr. hypodermic doses, given every 15 minutes, until ¾ gr. have been administered, when given in conjunction with 45 grs. of chloral by the bowel, is of more value than is usually estimated. He has not found that bleeding is of great value, except in sthenic cases, and considers the administration of such drugs as strychnin, nitro-glycerin, and camphorated oil of more use. In cases where there is time to stimulate elimination every eliminative organ should be pushed, but usually they do not respond with the necessary acceleration. Rapid delivery (30 minutes) he does not believe should be practiced, as the after-effects caused by lacerations, producing hemorrhage and endangering sepsis, involve too much risk, although delivery should be as rapid as possible. The method of using Barne's bags has proved more satisfactory to him. Veratrum viride has not proved to be a specific with the author.

A Few of the Clinical Uses of Liquid Air. Pearce (*Cincin. Lancet-Clinic.,* Aug. 19, 1899). As a local anesthetic it has been most satisfactory, minor operations being done with no pain at all, and no injury to surrounding tissues. In neuralgias, and pain of herpes zoster, it has given prompt relief. A case of erythematous lupus, in which it was used, healed nicely, without the deep searing attended by other forms of treatment. A case of epithelioma of the face yielded easily. In cases of small tumors of the face, navi, etc., it can be used, and leaves a scar which is hardly perceptible. Cases of boils, carbuncles and bubos show marked modification in their course. A case of facial erysipelas was subjected to the spray until the infected surface felt very cold, and 3 days later the patient returned, having had no other treatment and the inflammation had completely subsided. Sluggish ulcers seem to take on a new growth when they have been subjected to the spray of liquid air, which appears to have all the effects of a caustic, without its attendant inflammation.

A Case of Poisoning with Seeds of the Datura Stramonium. Thane (*Australasian Med. Gaz.,* Feb. 20, 1899) reports a case of a girl, five years old, eating the seeds of this plant and being found a half hour later (4:30 P.M.) in a comatose condition. The mother gave salt as an emetic, and castor oil, both being retained; during a ride of 30 miles the child vomited a dark-colored material with some seeds in it, which the mother thought was due to eating blackberries. A few hours later the author observed the following symptoms: Pupils only moderately dilated; no conjunctival reflex; skin was red, but not enough to attract attention; temperature, 106.6°; pulse, 150, full and bounding; breathing, 60 per minute; abdomen full and hard; about every 5 minutes were tonic spasms. Three hours later the pupil became dilated, face less flushed, temperature dropped to $104^{4}/_{10}°$ and an hour later to $102^{4}/_{10}°$. A few hours afterwards the child

died (8:30 A. M.), evidently of asphyxia, face being dusky toward the end. *Post-mortem* was negative. He also reports two other cases occurring in a nearby town. The symptoms in the first case were: Temperature, 103-104°; coma, tonic spasms, delirium at times, dilated pupils. Death in 15 hours. While the second recovered, the symptoms were more typical, delirium, dilated pupil, dry skin, lips and tongue, fast pulse, no temperature. Treatment consisted of emetics, followed by morphin.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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The Production of Scarlatina by Inoculation. Stickler (*Med. Rec.*, Sept. 9, 1899) in an effort to develop a protective inoculation added $^1/_{600}$ part of carbolic acid to the secretion of the mouth and throat from a patient suffering with mild scarlatina and injected this secretion into the skin of 10 children. In each instance genuine scarlet fever resulted. The following were the conclusions: (1) The mucus of the throat and mouth has been shown with absolute certainty to contain the contagium of the disease. (2) The early eruptive stage of scarlatina is exceedingly infectious, because of the presence in the discharges from the mouth and throat of the special poison of the disease. (3) The contagium of the disease being in the mouth and throat secretions, care should be taken not only to disinfect these parts as perfectly as possible, but to keep the tongue, mouth, and lips moist constantly, if possible, in order to prevent the contagious principle being forced into the air of the room by the exhalations of the patient. (4) Mouth and nose wipes should be used instead of spit-cups and costly handkerchiefs, and they should be destroyed by fire before the discharges on them dry, *i. e.*, at once. If fire be not available, disinfecting solutions should be used strong enough to render the poison inert. (5) The soiling of the bed-clothing and personal apparel with mouth discharges should be prevented if possible. In the event of such contamination, they should be disinfected as soon as possible. (6) No toys or implements of any sort that cannot be boiled or subjected to the strongest germicidal solutions should be given the patient, as they are apt to become soiled by the mouth secretions. (7) Those who minister at the bed-side should be especially careful as to personal contamination and disinfection from the moment they enter the room. (8) The nostrils should be taken thorough care of, as the morbific matter which

finds its way into these parts will, in the dry state, easily find its way into the atmosphere of the room, thus making the spread of the disease more probable." W. B.

A New Method of Preparing Anatomical Specimens. Melnikow-Rasvedenkow (*Vratch.*, Vol. XX., No. 21) described before a meeting of Russian physicians in Kasan the new Moscan method, which is as follows: (1) Preliminary treatment of the fresh specimens with formalin; (2) subsequent treatment with 50-70-95 % alcohol; (3) final immersion in a solution of 20 parts of glycerin, 15 parts acetate of potash or soda, and 100 parts of water. The formalin may be used either in the form of vapor or watery solutions. In using the dry method, the specimen is placed in a closed vessel on cotton saturated with a 40 % solution of formalin; in the moist method a 10 % solution of formalin (40%) is used, to which is added 3 parts of acetate of potash and 0.5 parts of chlorate of potash. This method is very useful in preparing specimens for microscopic examination. Either the dry or the moist method may be employed. In the first the tissues are subjected to the vapors of formalin for 24 hours and then transferred into 95 % alcohol for 2-3 days, and finally preserved in the glycerin-acetate solution; in the second the tissues are kept for 24-48 hours in the solution of formalin, acetate of potash or soda and chlorate of potash. To preserve the color of the specimen, it is well to envelop it in some hygroscopic material, saturated with the glycerin-acetate solution, and place it in an air-tight vessel containing a little of the solution and a few crystals of thymol. The specimen is thus entirely excluded from light. This method recommends itself as one not inferior to that of Marini, which, however, is kept secret. A. R.

Experiments with Diphtheria-Antitoxin Introduced by the Mouth and Rectum for Curative Purposes. Nedrigajlow (*Bolnitsh. Gaz. Botkina,* Vol. X., No. 2) endeavored to establish experimentally how far the views entertained by some of the curative effects of antitoxin when introduced by the mouth or rectum can be substantiated. Accordingly, the author experimented on some 40 animals with antitoxin of various strengths and under diverse conditions of the gastro-intestinal tract, and obtained uniformly negative results. All the animals which received the antitoxin died as well as the control animals. Similar results were obtained when the blood-clot or internal organs of highly immunized animals were fed to those experimented upon. The latter observation contradicts that of Perini, who has obtained positive results in similar experiments. The author, therefore, comes to the conclusion that diphtheria-antitoxin is not absorbed unchanged by the blood from the gastro-intestinal tract, even when administered in very large doses, and in consequence no immunity whatever is conferred. This method, then, is not suitable in the treatment of diphtheria in men. As to the ultimate fate of the antitoxin when thus introduced the author promises to communicate his observations on that point. For the present, however, he states that his experiments so far warrant his conclusion that it is not destroyed by gastric, intestinal or pancreatic juices, by the bile or feces. A. R.

CLIMATOLOGY AND HYGIENE.

UNDER THE CHARGE OF
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Sending Tuberculous Patients to Distant Resorts. Dr. R. C. Newton (*Trans. Amer. Climat. Assoc.,* 1899) says: "In connection with this subject of sending our patients away to various places, where they may get the benefit of the altitude, we should not lose sight of the question of proper food to suit an impaired or feeble digestion. I have seen men out on the frontier who could eat almost anything and thrive on it; but when we are dealing with patients who suffer from the indigestion so common in pulmonary tuberculosis, they had better be kept at home, unless we are convinced that they can obtain proper food elsewhere, because we cannot fight tuberculosis with poor food. The digestion should always be kept well in sight—much more so than it usually is. A cheerful disposition and good digestion will help a man to recover from pulmonary tuberculosis, at home or elsewhere, while a man who is easily discouraged and who suffers from poor digestion will be handicapped in the best of climates."

Climate in the Treatment of Tuberculosis. Dr. N. S. Davis, Jr., of Chicago (*Trans. Amer. Climat. Assoc.,* 1899), said: "I wish to express my personal conviction that climate has very much to do with the promptness and efficiency of the outdoor treatment of tuberculous patients. During the last few years the pendulum of opinion has been swinging toward the view that tuberculous patients can be treated in almost any climate, providing they can be kept out of doors more or less continuously. It is true that efficient treatment may prove successful in any climate. For example, in the early days of Chicago, when it was still a frontier town, patients were sent there from the East and many cures of consumption were effected. It is true that tuberculosis may be practically cured in any climate, but it is also true that there are certain climates where a cure is much more likely to be effected than elsewhere. Colorado and similar localities undoubtedly afford the best climate for the treatment of tuberculosis."

The Disinfection of Railway Coaches and Street Cars Operating in Ohio. Warner (*The Virginia Med. Semi-Monthly,* June, 1899) calls attention to the advisability of disinfection of public conveyances in view of the fact that they may be the direct carriers of such transmissible

diseases as tuberculosis, diphtheria, scarlet fever, whooping cough, etc. He believes that the railway companies would be willing to stand the expense if the subject were properly presented to them. The most practical disinfecting agent is formaldehyd, and some experiments instituted by him under very unfavorable circumstances, although not quite conclusive, nevertheless led him to the opinion that by means of that substance disinfection could be successfully carried out.

The Utility of a Mountainous Climate in the Treatment of Pulmonary Tuberculosis. Egger (*Zeitschr. f. diatetisch. u. Physikal. Therapie,* Vol. III.; *Vratch.,* Vol. XX., No. 29) establishes the indications and contraindications to the use of elevated regions in the treatment of tuberculosis. Indications: (1) Hereditary predisposition, weak constitution, tuberculous habitus, diseases which predispose to tuberculosis (measles, whooping cough, etc.). (2) Unrecognized tuberculosis, usually treated as anemia. (3) Incipient tuberculosis (catarrh of the apices). (4) Infiltration of the apices without breaking down of the lung tissue. (5) Beginning of the breaking down process before cavities are formed and t° is elevated. (6) Pleuritic effusions which are not purulent but show no tendency to absorption. Contraindications: (1) Rapid progress of the disease. (2) Far advanced cases, when cavities have formed and are accompanied by a debilitating fever and extreme emaciation. (3) Wide-spread consolidation of either one entire lung or considerable portion of both. (4) Complication of tuberculosis by considerable emphysema or catarrh. (5) Marked affection of the larynx. (6) Albuminous urine as a result of chronic inflammation, amyloid degeneration or tuberculosis of the kidneys. (7) Uncompensated heart lesions, fatty degeneration of the heart, or atheroma. (8) Tuberculosis of the intestines or peritoneum. (9) Mental diseases.

The Relative Death-rates from Cancer and Consumption. Pryor (*Med. News,* 1899) sounds a timely note of warning against the indiscriminate use of statistics to support various theories and prophecies relative to cancer. The opinion that the latter disease is rapidly increasing, and will in a few years destroy more human lives than "consumption, small-pox and typhoid fever combined" is gaining ground among the profession, and vital statistics are adduced in support of these assertions. The author justly points out that the conclusions drawn from these data are erroneous. Cancer, it is true, is increasing, but not in such a ratio as to make the outlook so alarming. Practically every case of cancer is reported, because almost invariably fatal. On the other hand, many consumptives leave the state for other climates and the deaths are unrecorded here in the East. A certain unknown percentage recover and at least 25 % of autopsies reveal evidences of tuberculosis not fatal or healed. The difficulties in securing sick, industrial and life insurance and efforts to protect the family are at times giving rise to evasion and false returns. Moreover, contrary to the general belief, consumption is not decreasing *per se.* Deaths from all infectious

diseases have markedly decreased for the last 10 years, and consumption simply shares in this general decrease, preserving, however, its former ratio. This is largely due to the fact that while so much is known about consumption so little is done for its prevention and cure. A percentage, varying from 60% to 70% of early cases, can be cured, and the remainder improved by proper treatment. Therefore an immense and unnecessary loss of life and an appalling and unnecessary amount of suffering prevails in the State of New York because stupid, antiquated, inhuman and wasteful methods of dealing with the consumptive continue. The author finally urges upon the State to make an effective crusade against consumption, and until that is done the present death-rate of that horrible disease will remain unchanged.

Increase of Death-rate from Cancer in New Zealand. (*Med. Rec.*, Apr. 29, 1899.) The increase of the death rate from cancer is attracting much attention, and many speculations are being made as to the cause or causes. Since 1881, the death rate from cancer has doubled; in 1881, it was 2.69 per 10,000 of population; in 1897, it was 5.30 per 10,000. The death rate for males and females was nearly equal, being 5.31 of males and 5.43 of females. This was for 1897, the latest statistics published. Some attribute this increase to greater accuracy of diagnosis, but this is very doubtful. What improvement has been made in the diagnosis of cancer since 1881? We had microscopes then, as we have now. I am rather inclined to attribute it to the mental depression which has attended the great losses incurred by all classes, owing to over-speculation in land and mines. The glowing hopes which induced tens of thousands to emigrate to this colony in the seventies have been disappointed, and very many find it harder to get a living here than in the old country.

Diphtheritic Paralysis in Cases Treated with Antitoxin. Woolsey (*Lancet*, Aug. 26, 1899) states that the influence of antitoxin on diphtheritic paralysis may be summarized as follows: Up to the present the percentage of paralysis has increased on the whole. There is some evidence that large doses—i.e., not less than 4,000 units—of antitoxin are more effective than small ones, both in preventing paralysis and in diminishing the mortality due to it. The earlier antitoxin is given in diphtheria the less likely is paralysis to follow. Should it occur after early injection, it will probably be mild and of comparatively short duration. The type of paralysis has, on the whole, become less severe, or, at all events, less dangerous to life. Finally, diphtheritic paralysis has become more prone to attack the young. This change in age incidence has possibly made some minor differences in the relative frequency with which the various forms of paralysis are observed. The practical conclusion is that the full value of antitoxin is only obtained by using it early and in efficient doses. If this be done not only is life saved but various complications are prevented or at least deprived of their dangerous characters.

SURGERY.

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The Imperfection in Hand Disinfection. Gottstein and Blumberg (*Corres. Med. Press*) have recorded the results from hand disinfection in Mickulicz's Klinik. With Furbinger's method of hand cleansing (3 minutes' scrubbing in hot soap and water, 1-2 minutes' scrubbing in 6% alcohol, and a final scrubbing in 1-1,000 solution of mercuric bichlorid) bacteria were found upon the hands in 61.3 % of the cases and the practical results were glaringly imperfect. By lengthening the period for scrubbing and increasing the strength of the alcohol to 70 %, the percentage of germ-infected hands was finally reduced to 29 %, the staphylococcus albus being the most difficult organism to remove. The danger of wound infection from the hands, even after prolonged scrubbing, leads the author to commend the use of sterile gloves during operations.

Arterial Contraction and Obliteration a Chief Cause of the Muscular Atrophy Connected with Tuberculous Joint Disease. Miller (*Scot. Med. and Surg. Jour.,* Sept., 1899) believes that tuberculosis of the joints induces a reflex contraction of the adjacent arteries, which, if continued, may be followed by thickening of the middle coat of the arteries and finally by arteritis obliterans. Clinical and pathological study have added confirmation to this theory of the cause of the disproportionate and often permanent atrophy accompanying this affection. Practically, the theory places additional argument in favor of Bier's congestion method of treatment, or of measures to insure an early eradication of the tuberculous focus.

The Operative Treatment of Palmar Abscess. Brooks (*Bost. Med. and Surg. Jour.,* Aug. 10, 1899) finds the customary short incision over the metacarpal bones inefficient and liable to impair the future flexibility of the palm. He therefore, by incisions following the natural folds of the palm, lays back an extensive palmar flap, curets pus pockets and inserts gauze wrung out of hot bichlorid solution (1-5,000). Each day the antiseptic dressing is removed and renewed, a hot antiseptic bath for an hour or so being employed. When the surfaces are covered with healthy granulations the skin flaps are replaced and a dry dressing applied. The incision employed commences at the ulnar end of the transverse furrows, extends nearly its entire length, when it is brought to the furrow winding around the thumb and car-

ried along this to the wrist. The skin flaps are dissected up, exposing the palmar bursa.

Nephrectomy and the Desirability of the Earlier Diagnosis of the Conditions Requiring it. Noble (*Penna. Med. Jour.*, Aug., 1899) gives the history of 9 consecutive and successful nephrectomies in most of which the operative danger was markedly increased by the failure to early diagnose the renal lesion. In 5 of the cases the kidneys were extensively disorganized from tuberculosis. All of these patients were improved, 2 having apparently completely recovered their health. Of the remaining 4 operations, 2 were performed upon kidneys disorganized from the presence of renal calculi, a third was for a renal carcinoma, while the fourth relieved a post-operative ureteral fistula. The advantages of an early operation in nearly every case were so apparent that the author strongly urges the early and more exact study of all cases of pyuria and hematuria and the more general adoption of the comparatively safe renal exploration by the lumbar incision.

Complications and Sequelae Resulting from Appendiceal Pus. Deaver (*Jour. Amer. Med. Assoc.*, July 22, 1899) believes that appendicitis with pus formation produces ravages more disastrous than any other affection occurring within the abdominal cavity. The complications and sequelae noted include septic and croupous pneumonia, nephritis, hepatic abscess, endocarditis thrombo-phlebitis of the mesenteric veins, purulent pericarditis, pleuritis, peritonitis and the various varieties of intestinal fistula. Attention is directed to appendicitis as a cause of purulent pelvic inflammations. The lesions are usually most serious when the appendix points toward the spleen, least when it points toward the right side or lies beneath the ascending colon, while the pain is often in the left side when it points into the pelvis. The frequence of these formidable results of appendiceal pus strongly emphasizes the importance of early operation and the error of delaying for the so-called favorable interval.

The Effect of the Entrance of Air into the Veins. In a recent editorial (*Ther. Gaz.*, Sept., 1899) reference is again made to the overestimated dangers from the entrance of air into the veins. Not only has the writer seen air accidentally enter the veins during life without evil effects ensuing, but Sternberg (*Centralblatt für Chirurg.*, 11, 1899) has recorded two cases in which air entered the veins during operations for thyroid tumors, in quantities sufficient to induce marked symptoms, and yet both patients recovered from the operation: one, however, dying 15 days later from pneumonia. In the first case, following the tearing of the external jugular vein, a loud wheezing was heard and a very loud gurgle accompanied each heart sound. The respirations became superficial and the pulse slow, yet the patient soon recovered. In the second case there were symptoms of syncope, and a rhythmical sucking sound and a gurgling loud enough to be heard by the bystanders was present. Recovery ensued under vigorous restorative treatment. The presence of air in the heart *post-mortem* is probably often due to the activities of gas-forming bacteria.

LARYNGOLOGY AND RHINOLOGY.

UNDER THE CHARGE OF

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Treatment of Affections of the Sphenoidal Sinus (Zur Behandlung der Keilbeinhohlenerkrankungen). Cordes (*Monats. f. Ohrenheilk.,* No. 5, 1899) states that chronic affections are very frequent, and may be consequent upon an acute sinusitis or may follow a chronic condition in the nose or pharynx, ozena in particular. The subjective symptoms present nothing in particular—headache, localized perhaps in the occiput or in the crown of the head, or perhaps in the supraorbital region, subjective odors. Objective symptoms—crusts of a greenish-yellow color beneath the middle turbinate, caseous pus in the posterior part of the nose festooned along the septum, the choanal border or along the sides of the pharynx giving rise to a dry or atrophic pharyngitis. The diagnosis cannot be made with certainty before the cavity is explored—a procedure which is not always easy. The orifice of the sinus has a variety of location, it may be great or small, the nasal fossa may be contracted to such an extent as not to allow the passage of a probe. Sometimes the sinus is absent, or is ill developed; at other times it presents an over-development. In some cases the inferior wall extends so far forward that it is confused with the anterior wall, and the latter might be perforated when attempting to pierce the former. It is necessary, then, before operation to make an exact exploration of the sinus, and especially of its anterior wall. For this purpose the author practices, by means of a special instrument, fracture and lateral luxation of the middle turbinate. The operation, under cocain, is slightly painful and hemorrhage small. Once access is obtained so freely, apart from anomaly, the natural orifice of the sinus can be found with the sound and the dimensions of the cavity explored. For enlarging the orifice and lifting up the anterior wall of the sinus, the author inserts an instrument which is composed of two gouges sliding one over the other, fixed in a handle. This is introduced into the orifice and by rotating them gradually it is enlarged. The same instrument is employed to create an orifice where none existed. The operation under cocain is not very painful and the subsequent treatment consists in irrigation and insufflation of powder.—(Abstracted by Jankelevitch, in *Rev. Hebdom.,* etc., No. 30, 1899.)

Sarcoma of the Larynx with a Long Pedicle (Langgestieltes Sarcom des Kehlkopfes). Ephraim (*Monats. f. Ohrenheilk.,* No. 5) reports a patient who had for some weeks difficulty during respiration and deglutition on the right side of the throat. Examination disclosed an in-

tense reddening and swelling of the right arytenoid region and a bluish tumor the size of a pea at the bottom of the pyriform sinus. The tumor could be elevated with forceps, and proved to be inserted in the pyriform sinus by a long, narrow pedicle. It proved to be a sarcoma of small round cells surrounded by a thin, fibrous capsule. The pedicle was composed of loose connective tissue and in the superior parts some round cells. The patient was lost to view.—(Abstracted by Jankelevitch, in *Rev. Hebdom. de Laryngol.*, etc., No. 33, 1899.)

Membranous Tracheitis (Ueber Tracheitis Membranacea) G. Kuhn (*These de Zurich,* 1898) cites two cases of this affection, one consequent upon typhoid fever and the other following pneumonia. In one case the diagnosis of acute laryngitis was made and in the other that of acute edema of the larynx. In the case following pneumonia the membrane of the trachea was composed of fibrin and leucocytes just as the exudate in the lung. In the case consecutive upon typhoid fever the membranes were only in part composed of fibrin. They contained a substance refractory to the coloration of Weigert, that is to say, for mucin. The fibrin formed nodular spots which extended in prolongations in every direction, and between these projections the mucin was deposited. It was difficult to trace a line of demarcation between the spots of fibrin and mucus. During the course of the process one might find the fibrin exclusively; at other times it was absent entirely. When the process was mild and without severe irritation, the membrane would be composed principally of mucin. If the condition were intense, of a nature clearly inflammatory, with at times periods of inflammation, the fibrin could be found mixed in with the mucin.—(Abstracted by Jankelevitch, in *Rev. Hebdom. de Laryngol., Rhinol. et Otol.,* No. 30, 1899.)

OPHTHALMOLOGY.

UNDER THE CHARGE OF

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Resection of the Superior Cervical Ganglion in Glaucoma. Jonnesco (*Wien. klin. Wochenschr.,* May 4, 1899) reports 8 operations in several varieties of glaucoma, viz., 1 case of acute glaucoma, 3 cases of absolute chronic irritative glaucoma, and 3 cases of chronic simple glaucoma.

The results of operation were: (*a*) Lasting reduction of intraocular tension in all cases; (*b*) energetic or noticeable contraction of the pupil, which was permanent and occurred as well in the cases in which iridectomy had been performed; (*c*) disappearance of periorbital pain; (*d*) disappearance of attacks of irritative glaucoma; (*e*) improvement of vision in those cases in which visual acuity was not entirely gone.

The explanation of the beneficient effects of this operation is as follows: The excision of the superior cervical sympathetic ganglion destroys the vaso-

constrictor fibers of the eye, relaxing the arteries, lowering blood-pressure and reducing extravasation; it destroys the fibers which dilate the pupil, hence there is strong pupillary contraction, opening the iris-angle and excretory channels at the periphery of the anterior chamber; it destroys the excito-secretory fibers, and hence inhibits secretion; and it causes relaxation of the unstriped peribulbar muscle, removing excessive pressure upon the ocular veins.

The operation is indicated especially in the non-inflammatory types of glaucoma in which the nervous disturbances are predominant. On the contrary, iridectomy offers the best results in the inflammatory types, and is of less value in chronic irritative glaucoma without prodromes and in simple chronic glaucoma. Hence, resection of the cervical sympathetic is of value in just the cases that iridectomy affords little relief. We need not expect excision of the superior cervical ganglion to influence an established inflammation or restore an atrophic papilla, but even in such cases pain is relieved and tension lowered, and it is these distressing symptoms that often demand enucleation. Unless the eyeball is very unsightly and infected, sympathectomy is preferable to enucleation.

The after symptoms are congestion of the conjunctiva, globe, and nose. There is profuse lacrimation and nasal secretion, and heaviness of the head. These disappear on the first day. The pupil becomes contracted, the eyeball recedes in the orbit, the upper eyelid droops, and palpebral fissure becomes narrowed. There may be slight dysphagia and pain during mastication at the cranio-mandibular articulation, which, however, soon disappear.

The therapeutic results already mentioned are an immediate reduction of intraocular tension, disappearance of periorbital pain and headache; and, in cases in which the papilla is not entirely destroyed, an improvement in visual acuity and field of vision, which often increases noticeably from day to day.

The technic of the pre-mastoid operation is as follows: (1) A cutaneous incision is made from the upper angle of the inferior maxilla, extending several inches along the anterior border of the sterno-mastoid. (2) The anterior border of the muscle is freed, and the muscle is drawn outward and backward by a retractor; the deep layer of the aponeurotic sheath is cut by a grooved director, and a second retractor is used on the inner lip of the wound to draw the larynx inward. (3) There is now exposed a bundle of vessels and nerves. The anterior wall of the vascular bundle is cut, and the internal jugular vein is drawn outward by a retractor and the carotid artery and pneumonogastric nerve are drawn inward. The carotid sheath and prevertebral fascia are carefully opened. The superior cervical ganglion is brought to view, seized with the forceps, and is dissected from below upward, and all afferent and efferent fibers cut by blunt curved scissors. The ganglion is then torn out with the fingers, and a final cut is made below. (4) The border of the sterno-mastoid is united to the deep tissues by means of three or four cat-gut sutures. The superficial incision is closed by fine cat-gut sutures, without leaving a drain *in situ*. The operation may be performed in from 10 to 15 minutes, it is almost bloodless, and it permits the fibers of the superior cervical plexus and the external branch of the

spinal accessory nerve to remain intact. Under antiseptic precautions the bad results are trifling and the bandage may be removed in 6 days.

Ball, of St. Louis (*N. Y. Med. Jour.*, July 1, 1899), has operated twice with success. In one case of absolute glaucoma with pain, there was immediate relief of suffering, and tension steadily decreased. In the second case, one of chronic simple glaucoma, besides the relief from pain and diminution of intraocular tension, vision had increased in 3 weeks from mere light perception to counting of fingers at 7 feet.

Ball employed the posterior operation, which in his first case he describes as follows: On May 15, 1899, the patient was anesthetized, chloroform being employed. An incision 4 inches in length was made on the right side downward from the mastoid process, extending along the posterior border of the sterno-cleido-mastoid muscle. The external jugular vein was cut and tied. The sterno-cleido-mastoid was then separated from the trapezius muscle and the spinal accessory nerve was cut. A deep dissection was then made, exposing the carotid sheath. This was opened to locate the pneumogastric nerve beyond question. The carotid, internal jugular, and pneumogastric nerve were then pulled forward, bringing into view the rectus capitis anticus major muscle, on which the superior cervical ganglion rests. Tearing through the fascia, the ganglion was found and stripped. The ganglion was then cut high up with curved scissors and all its branches severed. About one inch of the trunk of the sympathetic below the ganglion was removed. There was no change in the pulse or respiration. The wound was closed with interrupted sutures and the neck placed in a plaster cast. The time required for operation was 15 minutes. Immediately after the operation the right eye was suffused with tears, the right conjunctiva much injected, and the right nostril was moist. The intraocular tension was —?. The patient slept well all night, being free from pain for the first time in over two months. The temperature at 7:30 P.M. was 99.2°; pulse, 80. The patient's temperature did not at any time exceed 99.8°, nor did her pulse exceed 90. Tension steadily decreased to —1. On May 16th slight ptosis was noticed on the right side. This symptom is still present. On May 19th the circumcorneal injection was much less; the conjunctival hyperemia and lacrimation were still present, while the ptosis was slightly increased, and tension was +1.

Albuminuric Retinitis. Samuel West (*Med. Press and Circ.*, Sept. 6, 1899) draws a sharp distinction between the two forms of albuminuric retinitis, the degenerative and the exudative. They stand in strong contrast with each other in the following respects: (1) *Of the form of disease with which they are usually associated:* the degenerative with granular kidney, the exudative especially with parenchymatous nephritis. (2) *Of their nature and cause:* the exudative being inflammatory and probably toxic in origin, the degenerative consequent on vascular changes and more or less mechanical in origin. (3) *Of sight:* for the exudative, even in the extreme forms, may recover, with little or no defect of sight, but with the degenerative, if there is any impairment of sight, it is usually progressive. (4) *Of diagnostic value:* the exudative being an interesting by-phenomenon of

chronic parenchymatous nephritis, an affection the existence of which is obvious enough, while in granular kidney the degenerative often makes the diagnosis certain in cases which have been hitherto obscure. (5) *Of risk to life:* for while in both cases it indicates a grave form of renal disease which may of itself prove fatal, in granular kidney it indicates in addition all those dangers to which arterial disease exposes the patient.

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

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Cerebral and Meningeal Syphilis Treated by Intra-muscular Injections of Insoluble Salts of Mercury. Stinson. (*N. Y. Med. Jour.,* Sept. 2, 1899.) The case reported is one of tertiary syphilis, treated by injections of the salicylate of mercury, the dose employed being 2 grs., suspended in ½ dr. of sterilized almond oil. The injection was made with a needle 2 inches long and introduced into the muscular tissue of the buttock. The author reports that one injection produced an immediate improvement in all the symptoms, the pains in the head and neck disappeared and inside of 4 days the soreness and tenderness of the skull had also gone. The injections were given every 4 days. After the ninth injection, the patient showing marked signs of salivation, this treatment was discontinued, and iodid of potash given internally. Attention is called in the article to the technique employed in giving intra-muscular injections of mercury.

The Treatment of Syphilis. (*N. Y. Med. Jour.,* Apr. 8, 1899.) In discussing this subject, Bangs first calls attention to the fact that mercury acts as a specific by producing fatty degeneration of unstable and plastic effusions, the result of such fatty metamorphosis being taken up by the lymphatics, and passed out of the body through the various emunctory organs. Hence it follows that to be successful in the treatment of syphilis not only must mercury in some form be administered, but the patient's health must be maintained at the highest level in order to best promote a rapid elimination of the products of metabolism induced by the mercury. In other words, the patient is to be treated as well as the disease. The author is an advocate of excision of the primary sore where it can be done

without mutilation. Treatment is instituted at once without waiting for secondary symptoms. Mercury by the mouth, as much daily as the patient can digest, is advised. This is alternated from time to time with a course of inunctions of blue ointment. In certain malignant forms, where the tissues of the individual seem to be rapidly breaking down, hypodermic injections of bichlorid, in the region of the buttocks, are strongly advised. Treatment is kept up for a period of 3 years.

Vascular Supply of the Kidney. Zondek (*Berlin Med. Soc.*, June 28, 1899) says that certain facts in connection with the vascular supply are very important in conjunction with the surgery of this organ. The frequent existence of a second artery to one pole, he thinks, may explain why tuberculosis is so often limited in its distribution in this organ. This arrangement of arteries is also to be borne in mind in nephrectomy, as its neglect has given rise to serious hemorrhage. He advises in resecting portions of the substance of the kidney that the operator should excise a pyramidal piece, in order to avoid wounding the arteries which radiate from the hilus. In nephrotomy the incision should be made in the middle third of the lateral surface, parallel to the median line of the dorsum, one-third of an inch removed from it. The incision should be oblique with reference to the renal surface, the knife being slanted downward toward the hilum, so as to open into the pelvis as directly as possible. This incision gives the best chance to find a calculus when the pelvis is small, and avoids all large arterial branches, and thus diminishes the risk of hemorrhage and of subsequent colic, and economizes the renal tissue to the greatest possible extent. T. M. T.

Movable Kidney. Halstead (*Medicine*, Sept., 1899) advocates fixation of the kidney in (1) all cases when, after a fair trial of the palliative measures, the symptoms still persist; (2) immediately in all cases where the occupation or habits of the individual preclude the possibility of benefit being derived from abdominal supports. In these cases no time should be lost in temporizing measures, but operative treatment should be resorted to in the beginning. He states that the most generally available means of uniting the kidneys to the abdominal wall are: (1) Union of the adipose capsule opened or unopened to the edges of the incision: (2) free exposure of the kidney by incision of the fibrous capsule, and suture of this capsule to the abdominal wound; (3) denudation of the kidney by stripping back the fibrous capsule along its convex border and fixation of the kidney by means of sutures passed through its parenchyma. To these may be added the method of Senn, in which he exposes the kidney, denudes its convex border, and then fixes it in place by strips of gauze passed around the kidney and brought out through the lumbar wound. He admits that the operation of nephrorrhaphy or nephropexy with the present methods of fixation of the kidney is not all that could be desired, although the results are far from being bad. It would appear that from the suggestion offered by Wolkow and Dolitzin regarding the surgical treatment of this disorder efforts should be directed toward the restoration of the contour of the paravertebral fossae.

T. M. T.

OBSTETRICS.

UNDER THE CHARGE OF
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ASSISTED BY
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The Diagnosis of Eclampsia and the Diagnosis of Impending Eclampsia. Davis (*Amer. Gyn. and Obstet. Jour.*, XV., No. 1) states that the great majority of evidence assigns toxemia as the cause of this disease, and that the diagnosis of toxemia is made by studying the action of the excretory organs. The functions of the intestines and liver must be watched. The important factors in the examination of the urine are the quantity, specific gravity, the urea, the presence of albumin and the character of the sediment. If a close scrutiny shows that the excretory organs are deficient in their action, an interrogation of the nervous system will reveal symptoms of poisoning from retained toxins. Unless this condition is quickly relieved, eclamptic seizure will soon occur. [The urine should also be examined for indican and aromatic sulphates when there is danger of eclampsia. One or the other or both of these will be found present in excess in the urine when eclampsia is developing or impending.—ED.]

Rupture of the Fornix Vaginae During Labor. Poroschin (*Vratsch.*, No. 9) reports the following case: The patient was 33 years old, and a 7-para. The head had entered the pelvis and the vulva was beginning to distend when the patient complained of severe pain in the abdomen and became very pale. Labor pains ceased, and after an unsuccessful attempt at forceps extraction, the head was perforated and delivery accomplished with the cranioclast. The placenta was expressed and then loops of intestine and mesentery presented in the vagina. As the patient was greatly shocked the parts were tamponed until the third day, when the abdomen was opened, the prolapsed mesentery was removed and the utero-vaginal tear was sutured. The patient made a good recovery.

Sore Nipples and Mastitis. Rubeska (*Arch. für Gyn.*, Bd. LVIII.) states that he has observed sore nipples in 40 to 50 % of cases. The trouble usually appears on the fourth or fifth day following the labor. Prophylactic treatment should consist of daily washings with warm soap and water, followed by an application of 60 % alcohol and glycerin on alternate days. When nursing commences, soap suds and 60 % alcohol twice daily. The sore nipples are best treated with a 3 % boric acid wet dressing. In beginning mastitis energetic disinfection with 0.5 solution of bichlorid of mercury, drawing the milk, and ice applications are used. Should the mastitis commence with a chill and glandular infiltration, he advises parenchymatous injections of 3 % carbolic acid solution. The writer has never experienced trouble from this, using 2 or 3 syringefuls.

The Treatment of Fever Following Delivery, with Special Reference to Serum Therapy. Spencer (*Med. News,* Aug. 19, 1899) distinguishes 4 groups of fever following labor: (1) "One-day fever" due to emotion, etc.; (2) due to complications not referable to the labor, as influenza, scarlet fever, phthisis, typhoid, etc.; (3) due to infection from pre-existing pelvic lesions, as pyosalpinx and appendicitis; (4) due to external infection, "puerperal fever." Whitridge Williams and others have shown that puerperal fever may have its origin in a number of micro-organisms, as streptococci, staphylococci, colon bacilli, gonococci, anaerobic bacilli, diphtheria bacilli, gas bacilli, and typhoid bacilli. Spencer believes that it is not necessary for a medical man to abstain from practice when in attendance on such a case, as thorough disinfection will make it possible for him to attend other cases with safety. The conclusions reached by the author in regard to the value of serum-therapy are as follows: (1) That as usually applied serum-therapy in the treatment of puerperal fever has no scientific base: (2) that it has not lowered the mortality; (3) that it usually lowers the temperature and sometimes improves the general condition; (4) that its use is not free from danger.

Dilatation of the Ostium Vaginae as a Preventive of Ruptured Perineum. Macomber (*Med. Council,* Aug., 1899) uses the Champétier de Ribes bag for gradually dilating the vagina with a view of discounting the effect of the fetal head in producing laceration of the perineum. When the os was the size of half a dollar the bag was introduced and distended to its full limit. The patient's exercise was not interfered with. The head entering the pelvis presses on the bag and thus makes continuous dilatation of the perineum. With the expulsion of the bag, the head immediately followed without any laceration whatever. The presence of the bag in the vagina stimulates and strengthens the pains. Traction upon the bag dilates the inferior strait in advance of the head, which tends to reduce the amount of moulding and shortens the second stage. After the head enters the pelvis, its pressure on the bag maintains a state of constant distension of the perineum which paralyzes the contracting muscles.

Suggestion in Pregnancy and Labor. Ritter (*Med. Council,* Aug., 1899) states that suggestion is of great value in the vomiting of pregnancy. It is also of use in the other functional disorders of gestation. He states that it is possible to hypnotize the parturient woman so that she realizes none of the pains of delivery. He has recently discharged a case of confinement in which he was able to produce analgesia without loss of consciousness.

Massage of the Abdomen in Deficient Lacteal Secretion. Schien (*Jour. de Méd., Paris,* July 16, 1899) writes that massage of the abdomen will increase a deficient lacteal secretion. The treatments should consist of movements made upward from the pelvis to the breasts for half an hour daily, associated with massage of the breasts. The explanation of this result, as given by the author, is that the function of the mammary glands is intimately connected with the amount of blood brought to these glands from the genital organs through the blood vessels of the abdominal walls.

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Phantom Tumors and Their Treatment, Medical and Surgical.

If we again take up the cudgels in favor of a more patient and persevering use of medical procedures before resorting to surgery in certain cases, it is by no means for want of a thorough appreciation of the brilliant and often life-saving work now being done by our best surgeons. Too much cannot be said by way of praise of the remarkable achievements of these men, both in this country and Europe. But it has been most aptly said that "the chief end of medicine is to obviate surgery." We do not do full justice to our patients when we resort to surgery before exhausting all reasonably hopeful medical measures, unless in the case of a person who is not in a position to command, for a sufficient length of time, the special or skilled medical treatment required.

In the August number of the *American Journal of the Medical Sciences,* Dr. R. H. Fitz, Professor of the Theory and Practice of Physic in the Harvard Medical School, Boston, discusses, in a very full and interesting fashion, the subject of "Phantom Tumors," which he holds to mean, most frequently, idiopathic dilatation of the colon. In this view he is doubtless correct with regard to a large proportion of them, though dilatation of the stomach and downward displacement of both stomach and intestines account for a considerable number, while strictures, kinks or twists in the bowels are also answerable for many cases of the kind. But Prof. Fitz has avowedly written this paper for the purpose of recommending in "suitable cases of these affections" resection of the sigmoid flexure—an operation which was brought forward recently by Treves for cases of dilatation of the colon which have resulted from congenital defects in the terminal part of the bowel—either a narrowing or other obstruction.

Fitz, in the paper referred to, does not state explicitly just what cases of idiopathic dilatation of the colon he would consider suitable for this operation, but the one reported by him as having been operated upon is said to have had a greatly enlarged sigmoid flexure, with some dilatation of the descending colon and rectum.

The illustrations given of the woman's abdomen, taken in connection with the statement that "the waist was small, the epigastrium flat, but below the navel the abdomen was uniformly swollen and tympanitic to a marked degree," would raise a very strong presumption that there existed, besides the dilatation of the large bowel, a marked prolapse of the stomach and small intestines. The author of the paper states that "there was no alteration in the outlines of the stomach . . . as determined by percussion," but, unfortunately, percussion alone, unless practiced after inflation of the viscus or before and after drinking a quantity of fluid with the patient in different positions, is rarely decisive as to the position and size of the stomach. Even the two laparotomies done on this woman—one to remove the appendix, which was adherent to the abdominal wall, and the other to resect the sigmoid flexure— might not have revealed an enteroptosis if done with the patient in the now usual Trendelenburg position, since in this position the displaced organs may slip back into their normal places.

Assuming, however, that Prof. Fitz employed expertly the most recent methods of examining the abdomen, and that enteroptosis can be excluded in the case which he describes, the report seems to have been written before convalescence was complete, so that the conclusions to be drawn from it, as to the value of such an operation in dilatation of the colon not dependent upon organic obstruction, must be very limited.

On the other hand, it does not appear that either in this, or in any of the other cases of so-called phantom tumor cited by the author from other observers, there had been any employment locally of massage and electricity (within the bowel or without), or even a thorough and persistent use of either hot or cold stimulating enemata, with sufficient antiseptics to prevent fermentation and gaseous distention of the gut. Experience shows that with such well-directed and energetic local treatment of dilatations both of the stomach and colon, contraction can often be accomplished and a cure thus effected, even without the valuable aid of our surgical friends. In many cases, however, this requires a long time, with treatments of an expensive kind, daily or tri-weekly, so that for the working class and poor patients generally, some such operative measure as that described by Dr. Fitz may be a real boon.

The Treatment of Diphtheria.

Dr Robin comes valiantly to the defence of antitoxin in the present issue of the INTERNATIONAL with a paper which completely answers various objections that have been urged against it as a means of treating diphtheria, leaving the objectors not a single leg to stand on. He lays the chief stress upon the invincible character of the evidence which comes from the laboratory, relegating the clinical testimony to second place. Without going into the question of the relative value of these two kinds of data, we desire merely to emphasize the

fact, clearly demonstrated by Dr. Robin's paper, that fully and impartially marshalled the evidence of both kinds is overwhelmingly in favor of the new method. The clinical statistics arrayed by him, though not covering by any means all the published reports which are favorable to antitoxin, constitute a very strong showing. The fact that the mortality reports of certain isolated cities can be so manipulated as to bear apparently against the efficacy of antitoxin, while the majority of such figures throughout the world show very favorable results from it, ought not to weaken the faith of any one in the remedy.

The truth is, that the published statistics in general of the mortality from diphtheria under the antitoxin treatment, convincing as they must be to every unbiased mind, make a less favorable showing for the method than they should, for the reason that many of them are composed largely of hospital reports, and it is well known both that, on the one hand, cases sent to hospitals do not come under treatment early, and, on the other hand, that it is precisely in the first day or two of the disease that antitoxin is most effective. There is great unanimity of opinion among clinicians who have thoroughly tried the remedy, that it accomplishes brilliant results when given in the earliest stages, and that it is comparatively inefficacious when its administration is delayed until the third day or later, when the gravity of the affection has been greatly increased by streptococcic infection. It is probably owing to this that some physicians connected with hospitals to which large numbers of cases of diphtheria are sent, nearly always, of course, after having become fully developed, do not think highly of antitoxin, while it is rare to find a family physician who has made a full trial of the new method without having become an enthusiastic advocate of it. We recall having seen, within the past year, some statistics from Chicago showing the comparative effects of the treatment by antitoxin when instituted at different stages of the disease by physicians in private practice. In the large number of cases in which treatment was begun on the first day the mortality was almost *nil;* begun on the second, the mortality was greater, yet still remarkably small as compared with that under old methods; begun after the second day, the treatment proved less notably superior to those formerly in vogue.

In this connection it is interesting to read on another page the testimony of Dr. Coleman in favor of heroic doses of calomel for diphtheria. The late Dr. O'Dwyer, the accomplished inventor of intubation, and a high authority in the treatment of diphtheria in the pre-antitoxin days, was in his later years a firm advocate of mercury in large doses in this affection. Dr. L. D. Judd, of Philadelphia, whose paper on this subject Dr. Coleman confirms so strikingly, has found calomel an almost unfailing remedy in the same disease.

Why not use both antitoxin and calomel systemically in addition to energetic antiseptic local treatment, as is emphatically recommended by Prof. Kyle in his new work on the Nose and Throat, a review of which ap-

pears in this number of the INTERNATIONAL? We cannot be too much in earnest in combating such a dangerous malady.

We should expect to see our therapeutics constantly progress and improve. Every physician, putting aside prejudice entirely, should "prove all things, and hold fast to that which is good." Personally, we are among those who believe that the great science and art of medicine have in a sense just begun to be studied, and that the progress of the future in this direction will render the achievements of the past insignificant in comparison.

EDITORIAL MENTION.

PROF. E. E. MONTGOMERY presented to the Section on Obstetrics and Diseases of Women at the last meeting of the American Medical Association a scholarly paper entitled "Does the Removal of the Ovaries Exert Beneficial Influence on the Subsequent Progress of Malignant Diseases?" The paper is published in the *Journal of the Association* of September 23d, and is most cautious and conservative in its conclusions. Dr. Montgomery cites the reported experience of Beatson and others, showing apparently favorable results from oöphorectomy for the relief of mammary cancer, and examines critically the novel theory upon which Beatson explains the supposed influence of removing the ovaries in such cases. He refutes this theory as illogical, and doubts not only the possibility of effecting cures in this way, but also whether there is obtained "sufficient palliation and delay in the progress of the disease to compensate the patient for the discomfort of the additional operation."

DR. ALBERT C. BARNES, of Philadelphia, contributes to the *American Gynecological and Obstetrical Journal* for September the results of a collective inquiry into the relative efficacy and safety of glycerinized vaccine and the vaccine points which have so long been in almost universal use in this country. He reports that in Baltimore during a recent small-pox epidemic, over 100,000 tubes of the former were used with 95% of "takes" in primary cases. Not one of those vaccinated with these took small-pox. There was not more than 1% of excessively sore arms, instances of staphylococcic or streptococcic infection being very rare. In Porto Rico extensive vaccination has been practiced under Dr. George C. Groff, Brigade Surgeon, U. S. A., and there the glycerinized vaccine was successful in about 90%, while vaccine points failed entirely on account of the climate. The points have been a great convenience, but as often prepared are apt to infect the patient with more than the virus of cow-pox. If, therefore, the claims made in behalf of the glycerinized virus should be fully confirmed, it will prove a boon to the profession.

The Delaware State Board of Health is showing a commendable degree of zeal and energy not surpassed by those of the larger states. It has begun the issue of a periodical bulletin, the September number of which is before us. It is full of practical suggestions and explicit detailed directions to physicians relative to the methods to be followed in sending to the Board specimens of sputum, samples of urine, etc., for testing. The Board is under the direction of Prof. F. D. Chester, with Dr. A. Robin, one of our collaborators, as Bacteriologist and Pathologist. They announce that most of the preservatives hitherto in use for preventing changes in urine while being kept or transported to the laboratory have been found to be objectionable, interfering with some of the more important tests. They recommend 2 or 3 drops of formalin or 10 to 15 drops of thymol to each four ounces of urine as the best antiseptics for this purpose.

The Diphtheria Bacillus in the Organs. (*Revue Gen. de Path. Int.*, Jan., 1899.) Some recent research establishes that the Löffler bacillus does not penetrate much beyond its entering point, and that it does not find its way into the blood and organs, except when it is associated with the staphylo- or streptococcus. In this case, it is found in the blood and organs in abundance. These facts confirm Barbier's theory that the diphtheria bacillus does not find a ready foothold in man, and that it requires a soil prepared by some other infection. The importance, therefore, of keeping away from diphtheritic infection persons already affected by some other infection, becomes more and more evident by these later researches. When the streptococcus is associated with the diphtheria bacillus, the general condition is serious; there are apt to be cardiac accidents, very rapid and irregular pulses; the patient has diphtheria and also septicemia. The local treatment should be energetic and serum injected early and often.—*Laryngoscope.*

Treatment of Uremia by Water Diet. M. Renon (*Paris Corres. Med. Press*) says that there are cases of acute or chronic uremia where the patients cannot support the milk diet; the accidents persist, in spite of the milk, and perhaps even on account of the milk, which becomes a poison, as in cases of acute enterocolitis, and probably for the same reasons. In such cases, consequently, some other agent than milk should be employed. M. Mathieu has shown that in the course of chronic gastric uremia the patients could be treated simply with water, and he knew that M. Bar treated for the last year by the hydric diet, and with good results, women suffering from gravid albuminuria and from eclampsia. He thought, consequently, that in uremic patients who did not support the milk the hydric diet should be observed. In five cases he prescribed this treatment. At the end of three or four days the vomiting, diarrhea, and dyspnea had disappeared, and the days following rice-water and vegetable soup were ordered, and gradually the milk diet was resumed.

BOOK-REVIEWS.

THE DISEASES OF THE NERVOUS SYSTEM. A TEXT-BOOK FOR PHYSICIANS AND STUDENTS. By Ludwig Hirt, Professor at the University of Breslau. Translated with permission of the author by August Hoch, M.D., formerly Assistant Physician to the Johns Hopkins Hospital, now to the McLean Hospital, Waverly, Mass., assisted by Frank R. Smith, A.M. (Cantab.), M.D. With an Introduction by William Osler, M.D., F.R.C.P., F.R.S. With 181 illustrations. New York, D. Appleton & Co. 1899.

Though nothing is said about this on the title page or elsewhere, the book before us is really the second American edition. The second German edition came out in 1894. It is an admirable work. Rarely has any medical author, except our own Weir Mitchell, infused so much of his own personality into his descriptions of details usually dry and tedious, such as the symptoms, diagnosis, pathology, etiology and treatment of the incurable forms of nervous disease. This charm of style gives an unusual interest and zest to a perusal of the book and makes it exceptionally welcome as a work of reference. The classification, while embodying some innovations, is rational and satisfactory. There is little in the work that invites criticism, though American physicians would find it more useful if it had contained a fuller discussion of neurasthenia. The author refers to this as a disease especially prevalent in this country, and seems to have drawn his knowledge of it largely from the classic treatise of Beard, and the contributions of other American writers. On the other hand, he considers locomotor ataxia in an exhaustive manner, and has a very satisfactory account also of general paralysis and of nearly all the organic nervous affections. A most interesting and valuable chapter is that on "The Diseases of the Vagus—Vagus Neuroses," under which head the author treats of bronchial asthma and angina pectoris. He goes into the subject of treatment generally much more minutely and practically than is done by many German writers, and, in spite of unimportant shortcomings in a few features, his book well deserves the high opinion which neurologists generally entertain of it. Professor Osler's Introduction consists in the main of an appreciative and, of course, intelligent review of the work itself. The letter-press, illustrations and binding are all entirely creditable.

BAD-NAUHEIM: ITS SPRINGS AND THEIR USES. With Useful Local Information and a Guide to the Environs. By J. Groedel, M.D., Medicinalrat. Second edition. From the German Guide to Bad-Nauheim, by O. Weiss and J. Groedel. Friedberg and Bad-Nauheim, Germany, Carl Bindernagel. 1899.

Within the last few years, the fame of Bad-Nauheim as a locality where special treatment is given of unusual efficiency in certain organic heart diseases, has gone abroad over the whole civilized earth. Under the circumstances, it has been, of course, inevitable that large numbers of invalids with cardiac affections incapable of relief by any form of baths should flock there, many of them to meet with sore disappointment. Nevertheless, numerous cases of recent valvular heart disease and some cases of atonic dilatation of that organ have been greatly benefited by the natural warm carbonated saline baths

of Nauheim, together with the system of very mild resisted gymnastic movements, which was devised by the elder Schott, now deceased. This is not the place to discuss at length the value of this new treatment, but suffice it to say that it promises good results in a number of cardiac affections as well as for chronic rheumatism (for which the baths were originally employed mainly) and claims are made for the baths in tabes dorsalis. Dr. Groedel is one of the oldest, most experienced and most highly esteemed of the local physicians in Nauheim, and his little book conveys much valuable information about the place and the various kinds of baths, together with many of the indications for them.

A Text-Book of Diseases of the Nose and Throat. By D. Braden Kyle, Clinical Professor of Laryngology and Rhinology, Jefferson Medical College; Consulting Laryngologist, Rhinologist and Otologist, St. Agnes's Hospital; Bacteriologist to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases, etc. With 175 illustrations, 23 of them in colors. Philadelphia, W. B. Saunders, 925 Walnut Street. 1899.

Dr. Kyle was a successful teacher of pathology and microscopy before he became eminent as a laryngologist. Hence the striking superiority of his work over most other books on the same subject, on its pathologic side, and especially in numerous carefully drawn and beautifully executed original plates, illustrating histologically cases seen and studied by the author himself. It is for the rest a thorough, full, and systematic treatise, so classified and arranged as greatly to facilitate the teaching of laryngology and rhinology to classes, and must prove most convenient and satisfactory as a reference book, both for students and practitioners. The first chapter, on "The Anatomy and Physiology of the Nose and Throat," gives a clear and accurate description of those subjects and contains a number of highly graphic illustrations. In the next chapter, on "Illumination and Examination," the useful instruments and apparatus are fully described and pictured. The only fault to be found with the illustrations here is, that though one or two of them give an accurate representation of the rear of the author's head and chest there is nowhere shown a front view of his intellectual head and face. Then, after fourteen pages devoted to a "General Consideration of Mucous Membranes," including an account of nasal bacteria, catarrhal inflammation in general, etc.; there follow twenty chapters in which the various diseases of the nose and accessory cavities, naso-pharynx, pharynx and larynx are treated *seriatim* with a conscientious and creditable completeness in all their phases and bearings, both medical and surgical.

Under "Diseases of the Pharynx" a satisfactory account is given of diphtheria, with a number of excellent illustrations of the Löffler bacillus. The author advises an energetic local treatment of this affection with the use of calomel internally, and, in addition, an early resort to injections of antitoxin. He also recommends strongly the use of the latter as a means of prophylaxis. He takes decided ground with regard to antitoxin, insisting that its use both "as a curative and immunizing agent in the treatment of diphtheria has passed beyond the stage of experimentation."

On the other hand, in discussing the treatment of tubercular laryngitis, he

makes no mention of any of the modifications of Koch's tuberculin. Though in this he is in accord with the majority of clinicians, it seems to us regretable that, since other methods of treatment in this disease are admittedly ineffective, some encouragement is not given to trials of a remedy, which, in the hands of such experts in tuberculosis as Trudeau, Dennison and Von Ruch, has been strongly claimed to cure under proper hygienic and climatic conditions a certain proportion of cases.

The publisher has done his part well, and altogether the book is one which deserves the highest commendation.

FRACTURES AND DISCOLORATIONS. By Lewis A. Stimson, B.A., M.D., Professor of Surgery in Cornell University Medical College, New York; Surgeon to the New York and Hudson Street Hospitals; Consulting Surgeon to Bellevue, St. John's, and Christ Hospitals; Corresponding member of the Societe de Chirurgie of Paris. Illustrated with 326 illustrations and 20 plates in monotint. Pages xix.-822, with index. New York and Philadelphia, Lea Brothers & Co.

Although this work is in a sense a second edition of the volumes published in 1883 and 1888, it so fully reflects the progress made in the diagnosis and treatment of fractures and dislocations, that it has in reality been thoroughly rewritten, and rendered practically a new work. The Roentgen-ray method of diagnosis has so impressed itself upon our knowledge of fractures and dislocations that it has become an essential part of the treatment of all these injuries. It is as impossible to write a modern treatise on surgery without asepsis, as one on fractures and dislocations without a complete assimilation of the knowledge which we have gained by this new discovery.

Dr. Stinson has appreciated this fact in the fullest manner, and his work is replete with the knowledge gained from this most accurate and scientific method of diagnosis. There is, however, a very apparent lack of illustration by radiographs in certain chapters, and especially in the department devoted to dislocations. This is due, no doubt, to the short time which has elapsed in which illustrations of this character could be collected.

While adhering to the regular classification of fractures in general, and giving to compound fractures a greater importance than antiseptic methods of treatment would seem to warrant, the author lays special stress upon important variations from the ordinary types. These varieties of fractures which have heretofore been called "simple" have been shown to be more serious in their effect upon function than many "compound" fractures. This has called for a change in their nomenclature, with which the author does not seem to be in accord. This is also notable in his methods of treatment, where he leaves the suturing of fragments for cases of non-union or compound fractures. It would seem as if the knowledge gained by the Roentgen-ray method of diagnosis would point out the necessity of some direct method of treating seriously comminuted yet "simple" fractures. While the work is admirable in its detail and comprehensive in scope, we should have been glad to see a fuller discussion of the various methods of treating ununited fractures and delayed union.

The illustrations with which the book is replete are many of them very valuable additions, and yet there are many familiar faces.

PRACTICAL NOTES.

Incontinence of Urine. Besides the incontinence of urine symptomatic of a material lesion of the urinary tract, there exists, as is well known, an incontinence called essential, without any apparent lesion or anterior affection. In certain subjects the bladder is particularly sensitive, and the muscular fibers do not permit of extension beyond a certain limit. If it is exceeded the individual is forced to urinate. During the night sleep renders this sensation of the want to urinate still more obtuse, the child takes no notice of it, and wets the bed. According to Guinon, incontinence of urine is a stigmate of nervous heredity, for in nearly all the cases can be found hereditary antecedents in the parents who had suffered from hysteria, chorea, or other nervous affections. The medical anti-nervous treatment should consequently be the principle of the therapeutics—bromid of potassium, valerian, belladonna, etc.; frequently good results are obtained by pills containing ergot of rye, iron, and a little belladonna.—*Paris Corres. Med. Press.*

Juice of Fungi in Snake Poisoning. Further details are given of the investigations by C. Phisalix concerning the immunizing power of fungi against serpent venom. The material employed in over 200 experiments was obtained from cultivated mushrooms, as these were most easy to procure. Equal weights of finely cut mushrooms and of chloroform water were macerated for 24 hours, and then filtered; the filtrate, preserved by the addition of a few drops of chloroform, was then used as a vaccine. This substance was not in itself harmless, and in large doses even caused death. In spite of all antiseptic precautions, it often caused mortification of the tissues, unless filtered through a Chamberland filter, or sterilized by boiling. The immunizing effect of the injections was, however, in the case of guinea pigs, very marked, and was increased by repetition on the same subject at an interval of 15 to 20 days. The immunity thus acquired lasted for from 15 days to a month.—*Pharm. Jour.*

When Shall the Post-Pregnant Woman Sit Up? Many healthy, well-exercised women do not need to remain recumbent longer than from seven to nine days, while some can begin to get up upon the fifth day without apparent harm. Patients whose muscles are "soft" and who have been accustomed to indolent, lazy living, will require from 12 to 21 days, even though there are no lesions of the uterus or perineum. Lacerations along the genital tract place those so injured in a class by themselves. They cannot get up until their wounds have healed. A good working rule, which always requires individual application, is that a patient should begin to sit

up whenever she can do so without such posture causing gravity congestion in the genitalia. The change of posture sometimes causes an increase in appetite, and even acts as a stimulus to the uterine muscle. The erect posture should, of course, be assumed quite gradually, the patient sitting up only a few minutes at a time, lengthening the time according to the sense of comfort and absence of effect upon the lochial flow. Much assistance to uterine involution can be had by the use of sponge baths, ergot, strychnin, and massage. When we judge from the general condition of the patient that she might be benefited by sitting up, we are justified and obligated to make a speculum examination to note the condition of the cervix and inferentially of the endometrium after the seventh day.—*Obstetrics.*

Surgical Hints. In all amputations make periosteal flaps whenever it is possible. They not only protect the bone, but they prevent adherence of the skin, a complication which gives the patient an unpleasant sense of tension, sometimes amounting to very distinct pain.

It is an excellent idea to preserve certain pathological specimens, such as diseased ovaries and testicles. Their removal sometimes leads to disputes and to unjust accusations, and the possession of the specimens may be of great value in lawsuits for malpractice, etc.

Don't neglect so-called growing pains. While they are usually an indication of myalgia or rheumatism, and as such amenable to appropriate treatment, they sometimes indicate beginning disease of the joints and bones of the lower extremity, and should be very carefully investigated.

It is well to remember that in eclampsia there is greater danger than usual of poisoning by the intra-uterine employment of toxic substances, such as mercuric bichlorid and carbolic acid. It is best to employ nothing but non-toxic substances, such as the saline or the Thiersch's solution.

Fish bones imbedded in the pharynx often escape observation by the laryngeal mirror. Spray a little cocain solution to secure tolerance and examine carefully with the finger. Once you have felt it you may still be unable to see it with the mirror, but you can usually guide the extracting forceps along the palpating finger and extract the offending bone.

When a patient intends to wear an artificial limb after amputation, it is advisable to bandage from the extremity of the stump upward for a good distance, and as tightly as is compatible with good circulation. The reason for this procedure is that the artificial limb always hardens and diminishes the stump, and that judicious prior bandaging will diminish the changes thus brought about, ensuring a better fitting appliance.

The value of local anesthesia, under cocain or by any other means, is very great. But it is well to remember that some patients are so nervous that if they see the steps of the operation they are very likely to faint. It is more than likely that this has often given rise to the erroneous idea that the cocain itself was the fault. It is always best to cover the patient's eyes while operating, or to interpose the body of the surgeon or of an assistant in such a manner as to prevent the patient from seeing what is going on.—*Int. Jour. of Surgery.*